

**AMBULANCE SPECIFICATIONS**

**FOR A**

**TYPE I**

**CLASS I, CRAWL-THRU CONFIGURATION**

**STAR-OF-LIFE CERTIFIED AMBULANCE**

**150" X 96"**

The Emergency Medical Vehicle described in this specification is designed to meet or exceed the requirements of Ford Motor Company QVM Program, Federal Ambulance Specification KKK-A-1822 Revision F, and AMD Standards 001-009.

NOTE: Throughout the written Federal Ambulance Specification KKK-A-1822, there are frequent references to items to be included WHEN SPECIFIED. The manufacturer will build into a given ambulance any WHEN SPECIFIED item, but such items may not be included in the attached specifications.

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Y\_\_\_N\_\_\_

## INSTRUCTIONS TO BIDDERS

This specification covers a new commercially built surface emergency medical care vehicle herein after referred to as ambulance or vehicle. A vehicle in compliance with this specification shall be defined as a standard ambulance. This vehicle shall be in accord with the Ambulance Design Criteria of the National Highway Traffic Administration, U.S. Department of Transportation, Washington, D.C. This bid specification is based on the Federal Ambulance Specification KKK-A-1822F effective July 2007.

The purpose of this document is to provide minimum specifications and test parameters for the manufacture of an emergency medical care vehicle that meets the needs and desires of this agency. It establishes essential criteria for the design, performance, equipment, and appearance of the vehicle. All dimensions listed are given as the approximate sizes required to meet the needs of this department. The object is to provide a vehicle that is in accordance with nationally recognized guidelines. All vendors and manufacturers must meet all state and local regulations regarding the manufacturing, licensing, and sale of emergency rescue vehicles and ambulances within the state.

This specification calls for the following type of vehicle. It is in accordance with paragraph 1.2.1 of KKK-A-1822F.

Type I: Specialty cab and chassis with containerized modular body.

Class I: Two-rear wheel driven (4x2).

Configuration A: Elevating cot and squad bench for ALS (3.1.5.1/3.15.3 of F-Spec).

This is an engineer, design, construct, and deliver type specification and it is not the intention of this agency to write out vendors or manufacturers of similar or equal equipment of the types specified. It should be noted, however, that this specification is written around the specific needs of this department. With the intent to standardize certain components, specific brands have been specified in certain places. This has been done to establish a certain standard of quality. Other brands will be accepted providing the vendor or manufacturer details how another brand will meet or exceed the quality of the actual brand specified. Because of this, the Review Board reserves the right to accept or reject any and/or all bids.

The emergency medical care vehicle, chassis, ambulance body, equipment, devices, medical accessories, and electronic equipment to be delivered under this contract shall be standard commercial products that meet or exceed the requirements of this specification. The ambulance shall comply with all Federal Motor Vehicle Safety Standards (FMVSS) and Federal regulations applicable or specified for the year of manufacture. The chassis, components, and optional items shall be represented in the manufacturer's current technical data. Materials used in the construction shall be new and not less than the quality conforming to current engineering and manufacturing practices. Materials shall be free of defects and shall be suitable for the intended use.

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Any exceptions to these specifications must be clearly pointed out. Otherwise, it will be considered that the items offered are in strict compliance with the written specifications and that the successful bidder will be responsible for delivering a vehicle meeting these specifications. Any exceptions must be marked as such within the body of the bid and explained on a separate page marked "EXCEPTIONS". Bids taking total exception to these specifications will not be accepted.

Y\_\_\_N\_\_\_

## INFORMATION AND DESCRIPTIVE MATERIAL

The bidder must furnish all information requested in the space provided on the bid form. The manufacturer must supply a dated copy of their Ford QVM certificate as proof that they are a current member of the Qualified Vehicle Modifier Program. This requirement must be met even if the chassis specified is not a Ford to ensure that chassis modification standards meet a desired minimum level. The manufacturer must also supply the F-Spec certification for this particular type, at least one [1] complete set of 11" x 17" sketches, descriptive literature, and complete specifications covering the products offered. Bids not meeting this requirement will be considered non-responsive and rejected.

Y\_\_\_N\_\_\_

## PRICES AND PAYMENTS

All bid prices shall be on a F.O.B. destination and acceptance basis at the Purchaser's specified location. These Prices shall be complete and include warranty. Payment shall be made in accordance with these specifications and the Bid Proposal submitted by the Bidder. Payment shall be made upon acceptance of the vehicle(s) and equipment specified under these specifications. All bid prices and conditions must be specified on the bid proposal form. Bid prices shall be valid for at least thirty- [30] days from the date of the bid opening or as otherwise specified on the bid proposal form. Full payment shall be made as each unit is received, inspected, and found to comply with the procurement specifications.

Y\_\_\_N\_\_\_

## GENERAL LIABILITY

Bidders are required to submit with their bids a Certificate of Liability Insurance in the amount of five million dollars (5,000,000) in general liability as issued by the bidders insurance company.

Y\_\_\_N\_\_\_

## WARRANTY

The successful manufacturer shall provide a three (3) year/36,000 mile warranty on the vehicle which covers defective parts and/or components, the improper choice of materials, parts, and/or components, improper design or engineering, and poor or improper workmanship or quality control techniques. The warranty shall cover the complete vehicle and shall include all costs for labor and parts or materials that are required to correct all deficiencies.

There shall be provided a lifetime electrical warranty that covers all conversion circuit

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boards, harnesses, switches, circuit breakers, and relays.

There shall be provided a lifetime transferable modular body structural warranty. The term transferable is to cover the transfer of the warranty to a second purchaser should the department sell this unit later. The lifetime structural warranty period shall also remain in effect should the modular body be remounted onto a new chassis. This remount must be performed at a service center authorized by the original manufacturer.

There shall be a five (5) year/100,000 mile paint warranty.

Copies of all Warranty document shall be included with the bid packet.

Y\_\_N\_\_

## WARRANTY SURETY

To ensure quality, service, and full compliance to the above warranties the vehicle, with the exception of the chassis, must be constructed by the ambulance manufacturer. Additional elements constructed and installed "in house" are required to ensure service and parts availability. Subcontractors or lease/rental agreements to outside agencies will fail to meet this requirement. NO EXCEPTIONS WILL BE ALLOWED.

- Does the ambulance manufacturer as the prime contractor construct the modular body?
- Does the ambulance manufacturer as the prime contractor apply paint?
- Are interior cabinets constructed and installed by the ambulance manufacturer as the prime contractor?
- Are the wiring harnesses, circuit boards, and O<sub>2</sub> systems assembled, installed and tested by the ambulance manufacturer as the prime contractor?
- Is the upholstery for seat cushions, head pads, and backrests assembled and installed by the ambulance manufacturer as the prime contractor?

Y\_\_N\_\_

## DELIVERY

Since delivery proposals by the bidder will weigh heavily in the determination of the bid award, the delivery schedules that are submitted by the bidders shall automatically become binding upon the successful bidder. Delivery delays due to component supply problems or chassis delivery problems to the manufacturer shall not penalize either the dealer or the manufacturer. Delivery must be within a maximum of six- [6] months from the date of the award of the bid.

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## ANTI-COLLUSION STATEMENT

By signing this bid, the bidder agrees that his bid is made without any understanding, agreement, or connection with any other person, firm, or corporation making a bid for the same purpose and that his bid is in all respects fair and without collusion or fraud.

Company Name: \_\_\_\_\_

Bidder Signature: \_\_\_\_\_

Data Signed: \_\_\_\_\_

## SERVICE FACILITY AND SERVICE TECHNICIANS

The successful bidder must have access provide a service facility with Service Technicians that can perform minor repairs at this Department. Bidders must list below the nearest service facility and parts department to the purchaser.

Facility Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Approximate Miles  
From Purchaser: \_\_\_\_\_

Y\_\_N\_\_

## REFERENCES

All bidders must submit a list containing a minimum of fifteen [15] customers who are operating a similar model ambulance as described in this specification. The customer reference list shall contain the Department name, address, phone number and contact person.

Y\_\_N\_\_

## QUALITY ASSURANCE

To ensure the purchaser that proper engineering and production control guidelines have been implemented the ambulance manufacturer shall employ an integrated quality and process control program including specific process controls for facets of the manufacturing process deemed to be critical. These critical elements of the process shall be documented and that documentation shall be available not only to manufacturing personnel but also customers who visit the manufacturing facilities. The critical elements shall be denoted on the vehicle control document, which accompanies the vehicle through the manufacturing process. A sample of this document shall be available to the purchaser upon request. A continuous series of

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inspections shall be performed and signed off on the vehicle control document and shall include but not be limited to the following:

Visual inspection of the body, welds, and exterior attachments.

Visual and mechanical inspection of the heater/air conditioning lines, cables, grommets, valve connections, clamps, mounting brackets, belts, etc.

Visual inspection of cabinets, sliding/hinged cabinet doors, moldings, flooring, walls, headliner, and cushions.

Visual inspection of exterior paint, decals, and lettering.

Operational inspection of all electrical systems. This must consist of tests of battery voltage, electrical load tests, alternator output, beacons, flashers, siren, interior lighting, compartment lighting, power exhaust vent, scene lights, load lights, chassis lights, silent signal lights/buzzer, heat/cool unit, and any optional electrical devices as furnished by the manufacturer. The current requirements of each device tested must be noted on an inspection sheet together with the total current requirements.

The oxygen and vacuum systems shall be tested both prior to and after installation to meet the requirements as listed in those individual sections of this specification. Test data indicating temperature, pressure, timing, flow, etc., shall be recorded.

All chassis fluid levels shall be checked and filled to capacity. All doors, locks, windows, tires, etc. shall be inspected for proper operation and/or condition.

The completed vehicle must be test driven a minimum of ten [10] miles on paved highways and [3] miles on rough terrain to check handling, brakes, acceleration, and noises. A water spray test and visual inspection shall be performed after the road test.

Y\_\_N\_\_

### **BID BOND REQUIREMENT**

All bidders are required to furnish a bid surety in the amount of ten percent (10%) of the total price of the proposal. The surety shall be in the form of a bond only. Any surety in the form of a cashier's check, certified check or money order shall be considered non-responsive and shall be cause for rejection of the bid proposal. NO EXCEPTIONS.

Y\_\_N\_\_

### **PERFORMANCE BOND REQUIREMENT**

The successful bidder shall furnish a 100% performance bond within thirty (30) days after award of contract. The performance bond shall be furnished by the company who shall build the apparatus being proposed. NO EXCEPTIONS.

Y\_\_N\_\_

### **SINGLE BIDDER PER MANUFACTURER**

No bidder may submit more than one bid. Multiple bids from different manufacturers but represented by the same firm or person will not be accepted. Bids offered

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directly from manufacturers shall indicate if a local dealer / representative will be involved.

Bids from the same manufacturer but different dealers also will not be allowed to prevent complimentary bids being offered and to insure service from local dealer representatives. It is the desire of this department to have a dealer organization domiciled in the State of Indiana so that local service can be assured.

Y\_\_\_N\_\_\_

## WITHDRAWAL OF BID

A Bidder may withdraw a bid any time prior to expiration of the period during which bids may be submitted by a written request signed in the same manner and by the same person who signed the Proposal. No bid may be withdrawn, modified, or otherwise changed once the bids have been opened. It will be assumed that each Bidder has thoroughly and completely familiarized themselves with these specifications at the time of the bid. Modifications to a bid, once submitted will not be permitted. Simply stated, if any item, feature, options, etc. Is not stated in writing in the Bidder's proposal, it will not be considered. Bidders are cautioned that verbal or written modifications to already opened bids are neither valid, nor considered ethical. The comparison and selection of bid award will proceed only from what is stated in Bidder's written proposal. NO EXCEPTIONS

Y\_\_\_N\_\_\_

## AUTHORITY TO PURCHASE FROM EXISTING CONTRACTS

All bidders submitting a response to this Invitation to Bid or Request for Proposal agree that such response also constitutes a bid to all governmental agencies under the same conditions, for the same contract price, and for the same effective period as this bid, should the bidder feel it is in their best interest to do so.

Each governmental agency desiring to accept these bids and make an award thereof shall do so independently of any other governmental agency. Each agency shall be responsible for its own purchases and each shall be liable only for materials and / or services ordered and received by it, and no agency assumes any liability by virtue of this bid. This agreement in no way restricts or interferes with the right of any governmental agency to bid any or all items.

Bids will be made available to other municipal and governmental agencies within the United States of America. Unit purchases after a period of one year will be adjusted to reflect to the established Producers Price Index (PPI), U.S. Labor Dept., Bureau of Statistics, Series PCU3713 # 2A, Emergency Vehicles.

Y\_\_\_N\_\_\_

## MANUFACTURING CAPABILITY

Manufacturer must submit proof of a minimum of 10 years manufacturing experience as the same entity. The Manufacturer must be ISO 9001:2008 certified. A copy of the certificate shall be included with the bid. A NYSE or other stock exchange information must be furnished with stock symbol and latest publicly traded price at time of bid. If company is privately held then a complete financial statement covering the previous year must be furnished and / or financial statements of the principals involved. A current Independent rating of the Company's value by a firm

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such as Morningstar or Bloomberg shall be furnished with bid as further evidence that bidding company is fiscally sound. This is to ensure the viability of the bidding company and their ability to deliver vehicles as promised. This is due to the failure of many companies in said industry. NO EXCEPTIONS

Y\_\_N\_\_

### ENGINEERING CAPABILITY

To demonstrate your company's abilities and to show understanding of the written bid specifications, each manufacturer must submit with the bid, scale drawings of the vehicle it proposes to supply. Drawings must be "design and construct" drawings that will be used in the manufacture of the vehicle. At a minimum they must show overall dimensions, compartment sizes, lighting package, and major specified options. The drawings should show the front, rear, right side, and the left side of the exterior. They should also include the interior bulkhead, streetside, curbside cabinet plans and the interior floor plan layout. The reproduction of the drawing furnished with the bid will not be acceptable as each manufacturer utilizes different material sizes and construction techniques.

The Bidder shall furnish a list of on-site engineering staff with their educational accreditation. Additionally, the bidder shall list any other company engineering staff support that is available corporate wide. NO EXCEPTIONS

Y\_\_N\_\_

### MANUFACTURERS COMPLIANCE

The ambulance manufacturer shall have current, up-to-date Federal Ambulance Specification and Ambulance Manufacturing Division of the National Truck Equipment Association (AMD) Testing Data. Due to recent dynamic changes in the Federal Ambulance Specification KKK-A-1822F and AMD, this data must be current. The manufacturer shall also have an up-to-date Ford Qualified Vehicle Modifier Certification. Even if the unit proposed is not mounted on a Ford chassis; this certification, in conjunction to the certifications listed above, ensures a level of competence in chassis-to-module mounting. Current certifications shall be provided upon request of the purchaser.

The manufacturer shall meet and exceed the requirements set forth in the KKK-A-1822F Federal Ambulance Specification, and AMD Standards in all instances of specified standard features, options and special options listed in this ambulance specification.

**Failure to comply with this request and these requirements set forth above will result in an automatic rejection of the bid proposal. NO EXCEPTIONS**

Y\_\_N\_\_

### EMPLOYEE STATEMENT

It is mandated by the United States Government that all employees currently and to be employed during the duration of this contract are not discriminated against because of race, creed, color, sex, national origin and disability. Further this agency must be satisfied that the primary manufacturer's labor pool is treated in a fair and equitable manner. Therefore, it will be the responsibility of the primary manufacturer to include a human resource statement outlining employment status, working conditions, and benefits.

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Y\_\_N\_\_

## EXPERIMENTAL VEHICLES

It is not the intent of these specifications to call for an unusual or experimental vehicle(s). The primary manufacturer shall have a minimum of 10 years of uninterrupted manufacturing of similar or identical vehicles to the specifications set forth in this bid.

Y\_\_N\_\_

## GENERAL VEHICLE DESIGN, TYPE, AND FLOORPLAN

The ambulance and the allied equipment furnished under this specification shall be the manufacturer's current commercial vehicle of the type and class specified. The ambulance shall be complete with the operating accessories as specified herein and furnished with such modifications and attachments as may be necessary or specified to enable the vehicle to function reliably and efficiently in sustained operation. The design of the vehicle and the specified equipment shall permit accessibility for servicing, replacement, and adjustment of component parts and accessories with minimum disturbance to other components and systems. The term "HEAVY DUTY" as used to describe an item shall mean in excess of the usual quantity, quality, or capacity that is normally supplied with the standard production vehicle or component.

Y\_\_N\_\_

## COMPLETED VEHICLE DIMENSIONAL PARAMETERS

The vehicle furnished shall comply with the following dimensions at curb weight:

|                                       |        |
|---------------------------------------|--------|
| Length, Overall (including rear step) | 309"   |
| Width, Exterior (excluding mirrors)   | 79.6"  |
| Wheelbase                             | 192.5" |
| Height, Rear Loading                  | 33"    |
| Height, Ground to Step                | 19.5"  |
| Ground Clearance                      | 7.9"   |
| Length, Patient Compartment Interior  | 168"   |
| Aisle Space with Cot Installed        | 12"    |

Y\_\_N\_\_

## CURB WEIGHT

The curb weight is the total weight of the complete ambulance and is defined as the chassis, cab, body, and minimum required equipment as required by KKK-A-1822F, and includes a full complement of fuel, lubricants, and coolant shall meet Federal Requirements.

Y\_\_N\_\_

## PAYLOAD ALLOWANCE

A minimum of 1,700 pounds will be allowed over and above the curb weight for personnel, patient, and miscellaneous support equipment.

Y\_\_N\_\_

## INTERIOR HEADROOM

72" of interior headroom shall be provided inside the patient area of the body. It

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shall be free of obstructions for the occupants' safety and shall meet or exceed all transportation and regulatory requirements.

Y\_\_\_N\_\_\_

### TECHNICAL REQUIREMENTS CAB/CHASSIS

The ambulance shall be a Type I, Class I and shall have a chassis furnished with a two-door cab. The cab/chassis shall be suitable for subsequent mounting of a modular (containerized) transferable equipped ambulance body conforming to the requirements specified herein.

Y\_\_\_N\_\_\_

### CHASSIS MODEL AND TYPE

2011 or newer Dodge Ram 4500 HD Chassis  
4x2 Regular Cab 168.5" WB ST/SLT (DP4L64)

#### Powertrain

Cummins 6.7L I-6 OHV direct diesel injection 24 valve intercooled turbo diesel engine

- \* 220 amp HD alternator
- \* 1,460 amp (total) battery dual batteries
- \* Engine block heater, engine oil cooler, transmission oil cooler
- \* 6-speed electronic automatic transmission with overdrive, lock-up, driver selection
- \* Rear-wheel drive
- \* Limited slip differential, power take-off provision
- \* 4.44 axle ratio \* Stainless steel exhaust

#### Steering and Suspension

Hydraulic power-assist re-circulating ball steering

- \* 4-wheel disc brakes with front and rear vented discs
- \* Non-independent front suspension
- \* Front leading link suspension
- \* Front anti-roll bar
- \* Front coil springs
- \* HD front shocks
- \* Rigid rear axle
- \* Rear leaf suspension
- \* HD rear anti-roll bar
- \* HD rear leaf springs
- \* HD rear shocks
- \* Front and rear 19.5" x 6.00" argent steel wheels
- \* 225/70R19.5 BSW AS full-size steel spare wheel

#### Safety

4-wheel anti-lock braking system

- \* Daytime running lights
- \* Dual airbags, passenger side front-impact cancellable airbag
- \* Front height adjustable seatbelts with front pre-tensioners
- \* Sentry Key ignition disable, panic alarm

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## Comfort and Convenience

### Air conditioning

- \* SIRIUS AM/FM/Satellite, clock, seek-scan, in-dash mounted single CD, MP3 decoder, 4 speakers, fixed antenna, radio steering wheel controls
- \* Cruise control with steering wheel controls
- \* Power door locks with 2 stage unlock, key fob (all doors) keyless entry
- \* 3 12V DC power outlets, retained accessory power, 1 AC power outlet
- \* Analog instrumentation display includes tachometer, oil pressure gauge, engine temperature gauge, voltmeter gauge, oil temperature gauge, transmission fluid temp gauge, engine hour meter, compass, exterior temp, systems monitor, trip computer, trip odometer
- \* Warning indicators include engine temperature, low oil level, low coolant, lights on, key, low fuel, low washer fluid, bulb failure, door ajar, service interval, brake fluid, turn signal on, transmission fluid temp
- \* Leather-wrapped steering wheel with tilt adjustment
- \* Power front windows with light tint, driver and passenger 1-touch down
- \* Variable intermittent front windshield wipers, sliding rear window
- \* Dual illuminated vanity mirrors
- \* Auto-dimming day-night rearview mirror
- \* Interior lights include dome light with fade, illuminated entry
- \* Full floor console with covered storage, mini overhead console, glove box with light, front cup holder, instrument panel bin, dashboard storage, driver and passenger door bins

## Seating and Interior

### Seating capacity of 2

- \* Bucket front seats with adjustable head restraints, center armrest with storage
- \* 8-way adjustable (8-way power) driver seat includes power 2-way lumbar support
- \* 4-way adjustable passenger seat
- \* Premium cloth faced front seats with vinyl back material
- \* Vinyl door trim insert, full cloth headliner, full carpet floor covering with carpet front floor mats, deluxe sound insulation, metal-look instrument panel insert, plastic/rubber gearshift knob, metal-look door panel insert

## Exterior Features

### Side impact beams, front license plate bracket, fully galvanized steel body material

- \* Gray fender flares
- \* Black side window moldings, black front windshield molding
- \* Black door handles
- \* Chrome grille
- \* 2 doors
- \* Trailer harness
- \* Driver and passenger power remote black heated convex spotter folding manual extendable trailer outside mirrors with turn signal indicators
- \* Front chrome bumper with front tow hooks
- \* Aero-composite halogen fully automatic headlamps with delay-off feature
- \* Additional exterior lights include cab clearance lights, underhood light, remote activated perimeter/approach lights
- \* Clearcoat monotone paint

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## Warranty

Basic 36 month/36,000 miles  
Powertrain 36 month/36,000 miles  
Corrosion Perforation 60 month/100,000 miles  
Roadside Assistance 36 month/36,000 miles  
Diesel Engine 60 month/100,000 miles  
Transmission 36 month/180,000 miles

Dimensions and Capacities Output 305 hp @ 3,000 Torque 610 lb.-ft. @ 1,600 rpm

1<sup>st</sup> gear ratio 3.740  
2nd gear ratio 1.960  
3rd gear ratio 1.340  
4th gear ratio 1.000  
5th gear ratio 0.770  
6th gear ratio 0.630  
Reverse gear ratio 0  
Curb weight 7,670 lbs.  
GVWR 16,500 lbs.  
Front GAWR Weight 7,000 lbs.  
Rear GAWR Weight 12,000 lbs.  
Payload 8,830 lbs.  
Front curb weight 4,515 lbs.  
Rear curb weight 3,155 lbs.  
Front axle capacity 7,000 lbs.  
Rear axle capacity 12,000 lbs.  
Front spring rating 7,000 lbs.  
Rear spring rating 12,000 lbs.  
Towing capacity 18,200 lbs.  
Front legroom 41.0 "  
Front headroom 40.8 "  
Front hiproom 63.6 "  
Front shoulder room 66.0 "  
Passenger area volume 64.0 cu.ft.  
Length 258.3 "  
Body width 78.9 "  
Body height 79.5 "  
Wheelbase 168.5 "  
Cab to axle 84.0 "  
Axle to end of frame 51.1 "  
Front tread 76.0 "  
Rear tread 73.6 "  
Turning radius 4.0 '  
Fuel tank 52.0 gal.  
Interior cargo volume 15.2 cu.ft.  
Interior maximum cargo volume 15.2 cu.ft.

## Packages2GG

Quick Order Package 2GG SLT  
(RSC) SIRIUS Satellite Radio; 6 Speakers; (HAA) Air Conditioning; Body  
Insulation; Bright Front Bumper; (V9) Cloth 40/20/40 Bench Seat; (CKE)

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Front Seat Area Carpet; Color Keyed Instrument Panel Bezel; Leather Wrapped Steering Wheel; Overhead Console; Power Black Manual Fold Trailer Tow Mirrors; Power Locks; Premium Vinyl Door Trim w/Map Pocket; Front 1-Touch Down Power Windows; Remote Keyless Entry; SLT Badge; Temperature & Compass Gauge; Traveler/Mini Trip Computer

### Emissions

NAS

50 State Emissions

Includes the regions of CA, CT, DE, GA, ME, NC, NJ, NY, PA and TX.

Powertrain ETJ

Engine: 6.7L I6 Cummins Turbo Diesel

Diesel Exhaust Brake

DG3 Transmission: 6-Speed Automatic Aisin AS68RC

(DMK) 4.44 Rear Axle Ratio; Auxiliary Transmission Oil Cooler; Tip Start

DMK 4.44 Rear Axle Ratio

Z4A GVWR: 16,500 lbs

Wheels & Tires

TUV Tires: 225/70R19.5G All Position

WP3 Wheels: 19.5" x 6.0" Steel TBB

Full Size Spare Tire

19.5" Steel Spare Wheel

Seats & Seat Trim

MJ Premium Cloth Bucket Seats

115V Auxiliary Power Outlet; Low Back Bucket Seats; Power 10-Way Driver

Seat; Power Lumbar Adjust

### Other Options

APA Monotone Paint Application

BAJ 220 Amp Alternator

HAA Air Conditioning

AH2 Ambulance Prep Group

(BAJ) 220 Amp Alternator; (XF6) Voltage Monitoring Auto Idle Up Sys

XKH Clean Idle Emissions Label

(NAS) 50 State Emissions

ADE Cold Weather Group

Engine Block Heater; Winter Front Grille Cover

CKE Front Seat Area Carpet

Front Floor Mats

ADA Light Group

Glove Box Lamp; Rear Dome w/On/Off Switch Lamp; Rear View Auto Dim

Mirror; Sun Visors w/Illuminated Vanity Mirrors; Underhood Lamp

RES Radio: Media Center 130 CD/MP3

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GFD Rear Sliding Window Manual.

RSC SIRIUS Satellite Radio

1-Year SIRIUS Radio Service; For More Info, Call 888-539-7474

XF6 Voltage Monitoring Auto Idle Up Sys

Fleet Options

XXJ B-20 Bio Diesel Capability

LM1 Low Beam Daytime Running Headlamps  
Interior Colors For: Primary

V3 Dark Slate/Medium Graystone  
Primary Colors For: Primary

PW7 Bright White Clearcoat

Y\_\_N\_\_

## **REAR AIR RIDE SUSPENSION SYSTEM WITH LOWERING KIT**

A Kelderman bolt-on rear air ride system with lowering kit and two (2) heavy duty anti sway bars; one (1) front and one (1) rear, shall be provided and installed. The system shall incorporate two (2) Firestone airbags mounted over centerline of the rear axle on each side of the vehicle. The pinion angle of the system does not change, thus eliminating driveline vibration that would result in overall poor ride and unnecessary body sway.

One (1) red Low Air Indicator light shall be installed in the front switch panel; One (1) dump switch shall be located on the OEM dash and one (1) dump cancel switch located on the curbside wall near the right rear entry door. The dump function shall be automatically activated when one (1) of the rear entry doors have been opened or with the dump switch in the dash.

The system shall lower the ambulance to Federal Specification patient loading height. The ambulance manufacturer will inflate the bags to the recommended manufacturer's requirements prior to delivery.

Y\_\_N\_\_

## **SHOCK ABSORBERS**

Front and rear shock absorbers shall be OEM supplied and installed.

Y\_\_N\_\_

## **ELECTRIC THROTTLE**

An ETM80 High Idle Switch shall be preset to the proper RPM per the manufacturer's specifications.

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Y\_\_N\_\_

## ADDITIONAL AC COMPRESSOR

An additional engine mounted AC compressor shall be installed.

Y\_\_N\_\_

## APPOINTMENTS

The manufacturer's heaviest duty heating and air conditioning package must be used. The rearview mirror shall be day/night visibility type. The vehicle shall be equipped with dual electric multi-speed, delay windshield wipers and washer mechanism. The seatbelt/shoulder harness mechanisms shall be encased with a high impact plastic trim housing color keyed to match the driver's compartment. The balance of the driver's compartment trim shall be accomplished by the use of Formica, carpet, and cloth backed vinyl trim panels with 3/8" high-density foam padding (having a R factor of 0.25).

Y\_\_N\_\_

## HEADLINER

The cab headliner shall be OEM standard automotive cloth.

Y\_\_N\_\_

## BULKHEAD CAB

The bulkhead cab shall be carpeted to match the dash color scheme.

Y\_\_N\_\_

## SIGN

One (1) sign labeled "NO SMOKING OXYGEN EQUIPPED" and "FASTEN SEATBELTS" shall be installed in the driver's compartment on top of the floor mount console - toward walkthrough.

Y\_\_N\_\_

## CAB FLOORING

The cab flooring shall be OEM supplied and installed.

Y\_\_N\_\_

## BATTERY SWITCH

A TST Commander 357 transducer shall be installed. This system will have an adjustable integral timer pre-set to open the power circuit from the batteries to the main circuit board and interrupt power to all conversion functions after a determined amount of time when the chassis ignition is placed in the OFF position.

Y\_\_N\_\_

## ENGINE BLOCK HEATER

The OEM chassis engine block heater shall be wired to the external 125-volt power source. An On/Off "Summer" switch shall be provided to allow the block heater to be turned off in warm weather and shall be mounted within easy reach behind the driver's seat.

Y\_\_N\_\_

## TIRE CHAINS

An On-Spot tire chain system shall be provided and installed. It shall provide

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additional traction on slippery road surfaces. It shall have a manual switch located in the cab within easy reach of the driver to activate or deactivate the system as required.

Y\_\_N\_\_

### WHEEL SIMULATORS

Phoenix model ND1907 stainless steel wheel simulators shall be provided on all wheels of the vehicle.

Y\_\_N\_\_

### TIRE FILL EXTENSIONS

Phoenix AirMax stainless steel braided fill extensions shall be provided on both inside and outside rear tires of the dual rear wheels.

Y\_\_N\_\_

### FOG LIGHTS

A set of PIAA 1400 Series fog lights with clear lens, shall be provided and mounted on the bumper.

Y\_\_N\_\_

The fog lights shall have a manual "on/off" switch mounted on the front console switch panel in the cab.

Y\_\_N\_\_

### MIRRORS

The mirrors shall be OEM Power and Heated Telescopic Trailer Towing Mirrors with built-in convex mirrors.

Y\_\_N\_\_

### VEHICLE WIRING

All insulated cable shall conform to SAE J1292 requirements and shall have type GXL high temperature thermoplastic insulation conforming to SAE J1127 and J1128. All wire shall be of a gauge size to carry 125% of the current required by the specific circuit without overheating. All wires are to be color coded and stamped with the function of the circuit every four [4] inches for the continuous length of the line. Where practical or required, all wires shall be routed in high temperature looms with a rating of 300 degrees Fahrenheit. All conductors shall be annealed copper with machine crimps. Wiring harnesses shall be installed and warranted by the vehicle manufacturer. NO EXCEPTIONS WILL BE ALLOWED. This system must meet or exceed AMD Standard 005, Ambulance 12-Volt DC Electrical System.

Y\_\_N\_\_

### PORTABLE EQUIPMENT CHARGING CIRCUIT

Two (2) additional 12 VDC circuits for charging portable battery powered devices, i.e. Suction units, hand lights, defibrillators, portable radios, etc. shall be provided. These circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running or the battery conditioner is connected to shore power (operational). This implies a battery conditioner is required, and may be specified in a different location within these detailed specifications, but is not necessarily being specified within this paragraph. A minimum of 10-amp circuit breaker protection shall be provided for each circuit. These tagged, identified leads shall be located, one (1) in the patient compartment

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and one (1) in the vehicle cab. These leads shall not be connected to power nor shall they have any connectors attached at either end. These circuits are intended for unspecified future use.

Y \_\_\_ N \_\_\_

## CIRCUIT PROTECTION

Circuit breakers and relays are to be mounted securely to the inside of the electrical control center located in the patient compartment forward of the technician seat backrest. This cabinet shall have a door large enough for complete and unobstructed inspection and maintenance, and shall hinge out of the way for free movement. The control center shall be large enough to house all circuit breakers, relays, flashers, and the medical isolator. Space for one (1) additional 15-amp single pole breaker shall be provided on the main electrical board.

All auxiliary circuitry shall incorporate overload protection devices of automatic or manual reset thermal breaker types with spade style plug-in connectors and shall continuously carry 100% of the rated capacity for a minimum of one (1) hour. Bosch, Potter & Brumfield, Hella, and Omron brand relays may be used. All circuit breakers and relays are to be spade mounted snap-in type for easy removal. The circuit board shall be screen printed with all circuits legibly numbered and labeled.

The electrical distribution panel must be a double-sided copper trace printed circuit board with a double-sided laminated isolator. Board finish shall be semi-gloss non-photo-imageable soldermask over bare copper with hot air-leveled solder over non-masked copper. The board tracks must be sized for a three ounce copper panel with a minimum thickness of 0.0042 inches of copper on each side. Fuse capacity shall determine the width and thickness requirements of each circuit track (minimum circuit track width is 100 mils). All holes in the board must be plated through. Terminal strips must be mounted on the board for connection of wiring harnesses. The printed circuit board must meet or exceed a polyclad layered glass epoxy NEMA GRADE FR-4 material, and meet or exceed UL-94-V-O flammability rating and MIL-P-13949F-4B Specifications. The printed circuit board surface protection must be Dupont Vlacrel "8000" Polymer and withstand the MIL-STD-810C Corrosion Test and the MIL-STD-055110D Thermal Shock Test.

Design must be interchangeable with model styles from vehicle to vehicle without modification to wiring or compartment construction. In addition to the main circuit board, there shall be additional boards of the same design to provide control, lighting, and indication for the compartment and entry doors. All wires and connectors shall be of like resistance materials. One (1) complete set of each size relay and circuit breaker shall be included and mounted next to the main circuit board.

Y \_\_\_ N \_\_\_

## CIRCUIT GROUNDING

Grounding must be accomplished by use of a full ground wire harness. All ground wires shall be white in color and stamped every four inches (4") with the word "GROUND" or lettering "GRND". Ground return connections shall be made to the chassis structure, protected from corrosion, and available for service. In no case shall the aluminum body be used as a ground return.

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Additionally, there shall be a minimum of five (5) ground points between the chassis and body components of the ambulance. One (1) 3/4", 4 AWG braided ground strap between the engine block and the chassis frame; one (1) 2 ga. Stranded copper ground strap between the body and chassis frame; one (1) 2 AWG stranded copper ground strap between the battery box and the chassis frame; one (1) 2 AWG stranded copper ground strap between the drivers seat base electrical panel and the chassis frame; and one (1) 2 ga. Stranded copper ground strap between the cab floor and the chassis frame. These critical ground points shall be established with crimped copper ring connectors and dual star washers at each end of the ground strap. Due to the application of undercoating these grounds require no specific labeling. NO EXCEPTIONS ALLOWED.

Y\_\_N\_\_

## **INSTALLATION AND PROTECTION**

Wires shall be grouped or harnessed where practical. Metal edges through which cables pass shall be protected with nonmetallic bushings or grommets. All auxiliary circuits shall be wired separate and distinct from the vehicle chassis circuits, color coded, and clearly numbered. All wire passing from the console head shall be encased in a heavy-duty loom. All wiring shall be clipped or otherwise attached at suitable intervals to prevent rubbing or chafing due to wire movement, vibration, etc. All wiring must be stamped, color coded, labeled to indicate wire function, and conform to SAE 1292. NO EXCEPTIONS WILL BE ALLOWED.

Y\_\_N\_\_

## **SEQUENCER / LOAD MANAGER**

To prevent excessive loading or load spikes on the electrical generating system at system start up, a sequencer/load manager shall be integrated into the main circuit board for stepped control of the main master emergency functions. The sequencer shall sequence ON or OFF all master emergency functions at 0.5-second intervals. The sequencer/load manager shall sequence specified loads ON, in the following manner:

1. Body Warning Lights
2. Patient Compartment Dome Lights
3. Patient Compartment HVAC
4. Front Light Bar - if installed
5. Intersection and Grille Lights
6. Rear Light Bar- if installed
7. Wig-Wag Headlights- if installed

When a "low voltage" situation is detected, an audible alarm shall sound and an indicator light shall illuminate signaling the situation. When the vehicle transmission is in PARK, the load manager shall shed emergency functions until the system output voltage and the amperage draw of the systems still in operation equalize. When in PARK and the vehicle PARK BRAKE is applied the Stationary Elevated Idle Control (SEIC) will activate to provide additional voltage for the system. If the "low voltage", 12.0 volts or lower persists, the sequencer/load manager shall initiate the load shedding sequence at each 0.2 volt increment in the reverse order of these emergency functions.

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NOTE: Vital medical equipment such as suction aspirator system and/or electric oxygen valve shall not be included in the load shedding sequence. These systems shall remain powered until total failure of the electrical generating system occurs.

Y\_\_N\_\_

## LOW VOLTAGE MONITORING SYSTEM

There shall be installed, as an integral function of the ambulance conversion main power board, circuitry that continually monitors electrical system voltage. This system shall activate an audible alarm and a steady burn red LED warning light to indicate that system voltage has reached or fallen below 11.7 volts. There shall be included a switch to deactivate the audible alarm. The audible alarm, LED indicator light and the switch shall be located on an auxiliary control panel located in the drivers control console below the main switch panel.

Y\_\_N\_\_

## DRIVER SWITCHING CONSOLE

An ergonomically designed aluminum console finished with black Line X shall be built on the floor of the cab between the driver and passenger seats. This console shall be free of sharp edges and shall be able to accommodate the front switch panel, sirens and this department's communication equipment. The rear of the console shall contain two removable, drop in "cup style" holders.

Y\_\_N\_\_

## FRONT SWITCH PANEL

The front switch panel will house all emergency switching, ammeter, voltmeter, patient code lights, and battery lights. The ammeter, depending on equipment/chassis manufacturer specified, shall indicate the current flow to the batteries or from the alternator. The 12-volt voltmeter shall indicate the voltage of the batteries. An audible low voltage-warning device shall be installed with a reset cancel switch. This device shall sound whenever the voltage of the vehicle drops below 11.8 volts. This device shall automatically reset once the batteries are above 11.8 volts. A Datacon engine hour meter will be located near the bottom of the console on the driver's side and will be wired to ensure an accurate reading of running hours.

The complete module and switch panel housing shall be free of sharp edges. It shall contain all emergency switches, module switching, and legends according to their function and have backlighting controlled by the headlight rheostat. The switches shall be Euro-style, moisture resistant, rocker type, and shall be UL listed and CSA approved. Switch terminals shall be 1/4" spade types.

The panel shall be made of a non-porous composite material in a color to compliment the cab interior and shall be mounted in the front, floor-mount console. This panel shall be designed to include the switches labeled below and shall have patient status, door open, compartment open and low battery visual illuminated indicators. The panel shall also include a digital volt and ammeter to accurately monitor the vehicle's electrical load.

The switch legends shall be engraved plastic inserts. The backlighting shall light the

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words themselves rather than the background. Backlighting shall be accomplished with electro-luminescent light strips for their benefits of consistent light output, low amp draw, and extended service life.

The switches shall be Carling L-Style, moisture resistant, rocker type with a tactile feel. The L-Series switch, with sealed front panel components, is IP67 certified, and able to withstand temperatures from -40°C to +85°C. These switches are vibration, shock, thermoshock, moisture and salt spray resistant. The switch shall be rated for 250,000 switch cycles (Minimum) and shall have a 15 and 20 Amp rating @ 12VDC. These switches shall be UL listed and CSA approved.

The switch panel shall contain the following features:

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| Master Emergency                      | Module Disconnect                 |
| Primary/Secondary                     | Patient Status Indicator Lights   |
| Front Lightbar (If applicable)        | Patient Entry Door Open Red Light |
| Rear Lightbar (if applicable)         | Compartment Door Open Amber Light |
| Backup Alarm Disable                  | [1] Ammeter                       |
| Siren/Horn/ (Airhorn - if applicable) | Voltmeter                         |
| Leftside Scene Lights                 | Battery Indicator Lights          |
| Rear Load Lights                      | Spare Switch                      |
| Rightside Scene Lights                |                                   |

Y\_\_N\_\_

### **3-WAY SWITCHING**

A red module disconnect Switch shall be included on the front switch panel to activate the rear module power. This 3-way switch shall be able to not only activate, but deactivate the module.

Y\_\_N\_\_

### **VOLTMETER/AMMETER DISPLAY**

A pre-calibrated LCD Voltmeter/Ammeter display easily seen in low ambient light conditions as well as direct sunlight shall be wired to the battery system and included in the front switch panel. The voltmeter shall operate within a voltage range of +8 to +16 Vdc and shall measure voltage from 0 to 20 Vdc. There shall be one (1) ammeter display and the ammeter range shall be from -300 to +300. This instrument shall also include a built in audible and visual low battery alarm to alert the driver and passenger of a low battery situation. This display shall exceed the requirements set forth in KKK-A-1822F Paragraph 3.7.6.2.

Y\_\_N\_\_

### **HOURMETER**

A digital hour meter shall be installed on this unit.

Y\_\_N\_\_

### **MAP LIGHT**

One (1) Federal model LF12ES-LED Littlelight shall be installed in the chassis. Exact placement of this 12" LED map light shall be determined by this department.

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Y\_\_N\_\_

## HEAT/COOL SWITCH

A master heat/cool switch shall be provided in the chassis switch console. It shall enable the driver to switch the heating/cooling system "on" and "off" in the patient compartment when the rear switch is kept in the "on" position.

Y\_\_N\_\_

## BATTERIES

There shall be two (2) "No Maintenance" 12-volt batteries. They shall total not less than 1,500 CCA with 180 minutes of reserve capacity. The batteries shall be relocated from the OEM locations to a compartment/slide out tray on the curbside front of the module body. There shall be NO battery disconnect switches or devices installed that in any way cut-off power to the Ford Chassis. Any battery disconnect devices should interrupt power to the ambulance module only." There shall be a TST Commander 350 switch with a five-minute timer that secures power to the conversion module once the ignition has been turned off.

Y\_\_N\_\_

## SEAT BASE INTERNAL 12 VOLT DC POWER

For certain standard internal 12-volt DC power circuits, there shall be circuit protection provided by the use of manual reset breakers mounted in the outboard panel of behind the driver's seat. Potter & Brumfield 12 VDC breakers shall separately protect the Radio Power circuit with a 40-amp breaker; the Constant Power circuit with a 20-amp breaker; the OEM auto-throttle system with a 10-amp breaker (if applicable); and the Isolator circuit for the two (2) additional 12 VDC charging circuits required in 21-02-00, a 20-amp breaker. Due to the potential danger associated with a separate "battery hot" circuit, no exceptions to the above will be allowed. This Isolator circuit includes a "low voltage" Schottky Diode to isolate medical equipment batteries from any electrical loads. The diode shall be located and electrically connected between the circuit breaker and the receptacles. Additional breakers may be added for optional equipment such as power door locks, multiple radio installations or compressor pumps. Additional radio leads including hot wire, ignition switched hot wire and ground shall be provided. One set shall be in the front console and one set in the rear action area. Each power lead shall have a 30-amp circuit breaker and include one 12-volt hot wire and fuse holder with 30 amps.

Y\_\_N\_\_

## POWER OUTLET

Two (2) 12-volt power point style outlets shall be installed. One (1) shall be provided in the forward section of the primary action area, above the counter top and one (1) in the upper section of the ALS cabinet.

Y\_\_N\_\_

## 125 VOLT AC POWER

There shall be 125 volt AC wiring furnished. A three-wire system is used for powering medical equipment, battery charger, etc. This electrical system, including wiring and associated equipment, shall comply with AMD STD 009, 120V AC Electrical Systems. The system shall incorporate a hospital grade GFI (Ground

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Fault Interrupt) device with a 20 amp circuit breaker that can also be used as a disconnect switch for the interior 125 volt outlets. The GFI device shall be located on the streetside in the action area. When an inverter is specified, an automatic transfer switch shall be furnished which will automatically turn off the inverter 125 volt supply when the 125 volt utility shoreline power is applied.

Y\_\_N\_\_

### INVERTER/CHARGER

A Vanner Lifestar AC Power Inverter/Charger System, Model 20-1050CUL shall be provided and installed. This system shall combine a DC to AC power inverter with an automatic battery charger/conditioner and a 30Amp AC transfer switch. The Inverter shall convert 12VDC battery power to 1050 Watts of 120VAC modified sine wave power. The built-in transfer relay shall switch the AC output receptacle from the inverter to the AC input when the unit senses AC input from the shore/utility power. The 20-1050CUL Battery Charger shall incorporate an automatic multi-stage charger. When connected to shore power (AC utility power) the vehicle's battery shall be charged, then automatically maintained in full charge condition. The shore power shall be automatically connected to the system's AC output receptacle to supply power to the AC loads. When shore power is disconnected, the automatic transfer switch shall connect the AC output receptacle to the power inverter, which obtains power from the 12 volt battery. A setup switch shall be located on the front panel for selecting the type of battery, the battery charger output current and the load demand.

In addition, two remote status panels shall also be installed. The LSIR inverter status panel shall be included and installed in a location determined by this department. A LSCR charger status panel shall also be installed in a location determined by this department.

Y\_\_N\_\_

### EXTERIOR SHORE POWER

There shall be a Kussmaul 125-volt "Auto-Eject" plug rated at 20 amps or more with a spring-loaded cover assembly, UL listed for exterior use, located on the left side of the ambulance body close to the driver's door. This shall energize the vehicle's 125 volt AC circuit from an exterior power source. This connector must be labeled: "125 volt AC, 60 Hz, 20 amp power supply".

Y\_\_N\_\_

### INTERIOR 125 VOLT AC OUTLETS

There shall be three (3) three-wire duplex 125-volt AC hospital grade receptacles. There shall be one (1) in the primary action area, one (1) in the second action area and one (1) in the ALS cabinet. Red indicator lights shall be located on each 125-volt outlet to indicate a live "hot" circuit. "Add-on style" indicators are not acceptable. The outlets shall be labeled using a high quality screen printing to avoid accidental removal.

Y\_\_N\_\_

### ADDITIONAL 125VAC OUTLET

One (1) additional three-wire duplex 125-volt AC hospital grade receptacle shall also be provided and installed. The additional outlet shall be located over the squad

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bench. Red indicator lights shall be located on the 125-volt outlet to indicate a live "hot" circuit. The outlets shall be labeled using a high quality screen printing to avoid accidental removal.

Y\_\_N\_\_

### ELECTRICAL EQUIPMENT

All electrical equipment shall be electromagnetic radiation suppressed, filtered, or shielded to prevent interference with radio and telemetry equipment. The RFI shall not exceed SAE J551 limits.

Y\_\_N\_\_

### SPOTLIGHT

There shall be one (1) Optronics "BlueEye 4000" hand-held spotlight (400,000-candle power) hardwired to the passenger side of the center console. The spotlight must be weatherproof, corrosion and chip resistant, have a non-glare "BlueEye" bulb, and have a momentary "on" switch. A hanger shall be supplied for the spotlight.

Y\_\_N\_\_

### SIREN/AMPLIFIER

A Whelen, model #295HFSA7 remote dual siren amplifier plus radio repeat and PA. The flush-mount siren control head shall include phaser, yelp, wail, hands free, manual, public address and radio. Also included are push-button for manual and horn and an on/off power switch. This siren shall meet CA Title 13 requirements.

Y\_\_N\_\_

### SIREN SWITCHING

A horn/airhorn/horn 3 position switch shall be provided to activate siren, horn and air horn. This switch shall be located in the front switch panel.

Y\_\_N\_\_

### SIREN SPEAKER

Two (2) Cast DS100 Siren Speakers shall be installed in the front bumper of the vehicle. These speakers shall fit into the OEM fog light holes.

Y\_\_N\_\_

### AIR HORNS

Two (2) Buell trumpet air horns, shall be provided and installed through the front bumper. The air horns shall be powered by 12-volt compressor & air reservoir kit installed by the manufacturer. A check valve shall be installed between the air horns and the air reservoir to prevent depletion of air reservoir.

Y\_\_N\_\_

A three way switch for siren/horn/air horn and a momentary switch for air horn activation shall be provided. Location of the switches shall be determined.

Y\_\_N\_\_

### BACKUP ALARM

An EC 520 backup alarm shall be installed on a 2" x 2" floor tube at the rear of the ambulance module body. This alarm shall activate whenever the chassis transmission is put into reverse gear. There shall be a momentary switch in the driver's switch console that will cancel the alarm. The system shall have an

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automatic reset to activate the alarm the next time the vehicle is placed into reverse. When activated, this alarm shall generate an intermittent warning tone at a minimum of 97 dB as prescribed by KKK-A-1822F.

Y\_\_N\_\_

## REAR OBSERVATION MONITORING SYSTEM

An ASA Electronics Voyager Rear Observation Monitoring System shall be installed. Two (2) VCCS130 heavy duty color cameras with white housings shall be installed. One (1) camera shall be installed above the exterior rear patient entry doors and one (1) shall be mounted on the interior rear ceiling. An AOM-713WP 7" flat panel LCD monitor shall be installed in the driver's compartment area above the rear view mirror. The system shall be activated when the vehicle is placed in reverse.

Y\_\_N\_\_

## FLASHER

A Whelen AFM560 five (5) outlet Halogen, LED or Super-LED flasher shall be installed. The flasher shall have four Scan-Lock flash patterns.

This flasher shall be programmed to flash according to the current Federal Ambulance Specifications as a standard or a flash pattern determined by this department.

Y\_\_N\_\_

## EXTERIOR LIGHTING

Exterior lighting shall conform to FMVSS 108 and consist of OEM chassis halogen headlights, ICC clearance lights, parking lights, hazard warning lights, license plate lights, tail, stop, and backup lights. Tail and stoplights shall have red, clear, and amber lenses. Electrical wires for the taillights shall be sealed to protect them from the elements of weather using Deutch connectors. Two (2) side body rear lights with red lenses shall flash with turn signals and steady burn with the DOT lights. Included with the bid, evidence from the lighting manufacturer shall be provided specifying warning lights meet the photometric and chromaticity requirements of the current version of KKK-A-1822 as certified by a third party testing entity.

Y\_\_N\_\_

## DOT MARKER/CLEARANCE LIGHTS

Fourteen (14) Whelen 0S Series LED Marker/Clearance lights shall be provided and installed on the upper ambulance module body. Each light shall be LED type with a protective chrome plated flange. There shall be seven (7) amber LEDs with clear lenses installed - five (5) across the front module body extrusion and one (1) on each rear side body upper extrusion. There shall be seven (7) red LEDs with clear lenses installed - five (5) across the front module body extrusion and one (1) on each front side body upper extrusion, each shall be installed on the side upper body corner extrusion area.

Y\_\_N\_\_

## HEADLIGHT FLASHER

Wigwag style headlight flashers shall be provided and shall follow Ford Motor Company QVM Bulletin Q-138 for E and F-Series Headlamp Modification dated July 26, 2006. Daytime Operation: Daytime running lights must turn off when wigwag is

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on, and wigwag must cancel with parking lights for nighttime driving. NO  
EXCEPTIONS

Y\_\_N\_\_

## **BRAKE/TAIL/TURN & BACK-UP LIGHTS**

The brake/tail/turn & back-up lights assembly shall consist of two (2) Whelen 600 Series red LED brake/tail lights; (2) Whelen 600 Series amber LED turn signal lights with arrow shape lenses; and two (2) 600 Series Max-LED back-up lights with clear lenses. Each light shall have an integral Whelen chrome plated flange. All LEDs and electrical wires for the tail lights and turn indicators shall be sealed and/or encapsulated to protect them from external elements. The brake/tail and back-up lights shall be mounted in the rear kick plate area. The turn signal lights shall be mounted on the rear module body.

Y\_\_N\_\_

## **FRONT WARNING LIGHTS**

Two (2) Whelen 500 Series LED grille lights with (1) red LED and lens and (1) clear LED and lens shall be provided.

Y\_\_N\_\_

## **ADDITIONAL FRONT WARNING LIGHTS**

Two (2) Whelen 500 TIR6 LED grille lights, with (1) one red and (1) one clear shall be provided.

Y\_\_N\_\_

Two (2) Whelen 700 Series Super LED intersection lights and a red lens shall be installed.

Y\_\_N\_\_

## **FRONT BODY LIGHTS**

Seven (7) Whelen 900 Series Super LED front body lights shall be provided and mounted in the upper corners and center of the body. The lens colors shall be from left to right red, clear, red, clear, red, clear, red.

Y\_\_N\_\_

There shall also be two (2) Whelen 600 Series LED side turn body lights; one (1) mounted each upper corner of the front of the body, with amber lenses and arrows that flash with turn signals.

Y\_\_N\_\_

## **FRONT BODY LIGHT FLANGES**

These lights shall have intergal flanges provided by the light manufacturer and installed on the completed unit.

Y\_\_N\_\_

## **SIDE BODY WARNING LIGHTS**

Four (4) Whelen 900 Series red Super-LED steady-burn lights with red lenses and (4) four 90FLANGC chrome flanges shall be installed. One (1) light and one (1) flange shall be surface mounted on each streetside and curbside upper module body corner. A separate Whelen remote LED flasher shall be required for flashing requirements.

Y\_\_N\_\_

Two (2) Whelen 700 Series Super LED lights, each with a red lens shall be provided

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and mounted one (1) directly above each rear wheel well.

Y\_\_N\_\_

### SIDE BODY BRAKE/TAIL LIGHTS

Two (2) Whelen 700 Series red Minimum LED Brake/Tail lights with red lenses shall be installed on each side body at the rear. The lights shall have a steady-burn function in conjunction with the DOT lights and shall flash in conjunction with the turn signal lights.

Y\_\_N\_\_

### SIDE BODY LIGHT FLANGES

These lights shall have intergal flanges provided by the light manufacturer and installed on the completed unit.

Y\_\_N\_\_

### SIDE BODY SCENELIGHTS

Four (4) Whelen 900 Series 8-32 Degree Gradient Opti-Scene light scene lights, Model 90E000ZR shall be installed. Two (2) scene lights shall be surface mounted on each side of the module body. Each light shall have a 50 watt snap-in Halogen lamp and shall direct light from eight (8) to thirty-two (32) degrees off the mounting surface. The curbside scene lights shall be activated when the patient side entry door is opened. The streetside and curbside rearmost scene lights shall be activated when the vehicle transmission is placed in reverse. There shall be two (2) on/off switches located on the front switch panel to activate the scene lights when the patient side entry door is closed; one (1) shall control the streetside scene lights concurrently and one (1) shall control the curbside scene lights concurrently.

Y\_\_N\_\_

The two (2) curbside scene lights shall be activated when the module body side entry door is opened. The streetside and curbside rearmost scene lights shall be activated when the vehicle transmission is placed in reverse.

These scene lights shall meet the current AMD Standard 024- Scene Light Performance.

Y\_\_N\_\_

### SCENE LIGHT FLANGES

These lights shall have intergal flanges provided by the light manufacturer and installed on the completed unit.

Y\_\_N\_\_

### REAR BODY WARNING LIGHTS

Three (3) Whelen 900 Series Super-LED steady-burn lights with colored lenses and (3) three chrome flanges, model 90FLANGC, shall be installed. Two (2) shall be red Super-LEDs with red lenses, model 90RR5SRR, surface mounted on the upper rear module body corners. One (1) shall be an amber Super-LED with an amber lens, model 90AA5SAA, surface mounted on the upper rear module body center. A separate Whelen remote LED flasher shall be required for flashing requirements.

Y\_\_N\_\_

Two (2) Whelen 900 Series Super LED rear body lights, each with an integral 9E flange shall be installed in the mid-height position, one (1) each side of the rear body. The lens colors shall be red.

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Y\_\_N\_\_

Two (2) Whelen 600 Series Super LED rear body lights shall be provided and mounted in the lower position, one (1) each rear entry door. The lens colors shall be red.

Y\_\_N\_\_

### LOAD LIGHTS

Two (2) Whelen 900 Series 8-32 Degree Gradient Opti-Scene light scene lights, Model 90E000ZR, with chrome flanges shall be surface mounted on the rear module body above the rear patient entry doors. Each light shall have a 50 watt snap-in Halogen lamp and shall direct light from eight (8) to thirty-two (32) degrees off the mounting surface. The Load lights shall be activated when one of the rear patient entry doors are opened. One (1) on/off switch shall be located on the front switch panel to control both scene lights concurrently when the rear entry doors are closed.

These Load lights shall meet the current AMD Standard 024- Scene Light Performance.

Y\_\_N\_\_

### REAR BODY LIGHT FLANGES

These lights shall have intergal flanges provided by the light manufacturer and installed on the completed unit.

Y\_\_N\_\_

Two [2] rear body mid-height lights shall be wired to brakes. The brakes shall override the flashers.

Y\_\_N\_\_

### RUNNING BOARD LIGHTS

One (1) pair of Whelen brand, model #TOCACCCR LED running board lights with chrome flange shall be provided. The lights shall be mounted on the front body stone guard and shall be activated when the cab door is opened.

Y\_\_N\_\_

### DOOR PANEL LIGHT

One (1) Whelen 4" Red LED light shall be provided on each door panel of each compartment and entry door. The light shall have a recessed rubber flange and shall activate with the opening of each individual door

Y\_\_N\_\_

### RUBRAIL LIGHTS

Six (6) Whelen LED Strip-Lite lights shall be provided and mounted in the C-Channel rub rails. One (1) in each forward and rearward corner and one (1) center on both sides of the body. The lens colors shall be red on both the streetside and curbside. These Lights shall be installed in the C-channel rub rail to provide protection for this warning light. Due to this being a high wear area of the vehicle, installation of the lights above or below the rub rail are more exposed to damage and unacceptable.

Y\_\_N\_\_

### VISUAL WARNING DEVICE REQUIREMENTS

Due to the specific requirements for visual lighting required by this department, and

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the availability of these lights to all manufacturers, **NO EXCEPTIONS** will be allowed to these requirements stated above.

Y \_\_\_ N \_\_\_

## CONSTRUCTION CHARACTERISTICS

The body shall be 150" long, 96" wide and 87.5" high. All body panels, structures, and extrusions shall be fabricated of aluminum using alloys consistent with the load requirements of the vehicle. Unitized body construction will be accomplished by MIG welding all sheets, radius extrusions, corners, structural members, etc., together. All body surface aluminum side panels and roof panels shall be intermittently heliarc welded to the body frame support members in such a manner as to provide maximum strength and durability without causing heat warp. All exterior metal-to-metal body seams or the area of attachment of one aluminum panel to another shall be heliarc welded. All such welds shall be ground smooth for proper paint adhesion and appearance. The body structure shall be built and warranted by the vehicle manufacturer. **NO EXCEPTIONS WILL BE ALLOWED.** The vehicle must additionally meet or exceed AMD Standard 001, Static Load Test for Ambulance Body Structure.

Y \_\_\_ N \_\_\_

## CERTIFIED WELDING PERSONNEL

To assure that the specified vehicle meets the letter, as well as the intent of the Specification, the welding of body structure, chassis attachment points, doors, any aluminum or stainless steel components or attachments shall be performed by or directly supervised by personnel Certified by the American Standard Welding Association (ASWA). Those individuals shall have proof of current certification and shall make such proof available to the department upon reasonable demand.

Y \_\_\_ N \_\_\_

## CORNER EXTRUSIONS

To ensure weight support and structure durability in the event of an accident or impact the utmost strength in corner posts must be used. A radius arched aluminum extrusion is required. The extrusion shall include a full-length reinforcing member that extends from the crest of the curvature to the focal point of the outer arch. The continuous gusset must be extruded into the corner radius. Corner posts that are a part of the exterior body skin are not recommended as they may pull away at the point of impact. The extrusions must have a minimum strength of 29,000 psi.

Y \_\_\_ N \_\_\_

## ROOF

The roof shall be constructed of one-piece .090" aluminum. This aluminum shall be a highly corrosion resistant 5052H32 alloy with 2.5% magnesium and a tensile strength range of 28,000 to 33,000 psi. The roof substructure shall be constructed of four (4) full-length "Z" sections MIG welded to the roof for support. The "Z" sections shall be a series of six (6) separate pieces running full length, front to back, bridging to the roof bow frame work. They shall be of equally spaced distance, inboard to outboard, stair stepped sizes of 3/4" x 1-1/2" x 3/4" inboard, 3/4" x 1-1/4" x 3/4" center, and 3/4" x 1" x 3/4" outboard to form a crowned roof facilitating water runoff and ice build-up. The roof shall then be reinforced the entire length of the

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unit. For this reason, flat roofs shall be considered unacceptable. There shall be in addition to the above supports, twelve (12) .125" x 2" x 2" cross members welded to the "Z" sections 12" on center and be made of a highly corrosion resistant 6061T6 alloy with 1% magnesium and .6% silicone with a tensile strength range of 31,000 to 35,000 psi. Aluminum plates shall be welded between the roof support channels to mount lighting fixtures, assist rails, hanging stretcher mounts, and IV holders. Corner gussets shall be heliarc welded to the roof radius extrusions to enhance roof load bearing characteristics. Horizontal corner extrusions shall be .125" thickness and 2-1/2" radius. There shall be an integral drip rail formed into the extrusion. The horizontal extrusions shall use an interlocking method to secure the roof sheet into the envelope of the extrusion. The horizontal extrusions shall be of an open-face design for insertion of 1" x 2" x .125" tube structure. Corner caps shall be .125" cast aluminum and welded in place.

Y\_\_\_N\_\_\_

## SIDES

The sides shall be constructed of .125" aluminum sheets with a highly corrosion resistant 5052H32 alloy with 2.5% magnesium and a tensile strength range of 28,000 to 33,000 psi. The body shall have straight sides free of waves and welding warpage. Doorjamb shall be formed integral into the sidewall .125" aluminum sheets using a double flange design to match exterior compartment and access doors (extruded doorframes are not acceptable). Each sidewall shall have twelve (12) vertical .125" x 1" x 2" wall studs 12" on center and joined to the roof supports. The box 2" x 2" channels shall be a highly corrosion resistant 6061T6 alloy with 1.0% magnesium and .6% silicone and a tensile strength range of 31,000 to 35,000 psi. All box 1" x 2" roof and side support bows are .125" aluminum. Vertical corner extrusions shall be .125" thickness and have a 2-1/2" radius. The radius ends shall be tapered. The vertical extrusions shall be slotted for insertion of the sidewall sheets. The vertical extrusions shall be of a web construction design for internal structural support.

Y\_\_\_N\_\_\_

## FLOOR

The body floor shall have a tubular frame structure with main members constructed of .125" x 2" x 2" and .125" x 1" x 2" 6061T6 aluminum tubes, all being fully welded and gusseted. This framework is mounted using rubber gaskets to prevent contact of dissimilar metals. The tubular framing shall be on average of 12" on center. 3/4" thick x 6" wide aluminum shall be welded on top of the cushion rubber mounts installed full length of the body. This is necessary to add additional strength, ease in mounting, and ease in remounting the body at a later date. There shall be plates welded into the floor structure to provide additional mounting support for the cot mounts and technician seat. The floor frame is then plated the entire length with a .090" 5053H32 aluminum moisture barrier mounted under the subfloor to act as a heat shield and vapor barrier. The subfloor is then sealed and fastened to the floor structure.

This floor shall exceed the requirements set forth in AMD Standard 020 Floor Distributed Load Test for a bariatric cot (800 lbs.) Flooring structures not meeting this requirement will not be accepted by this department. **NO EXCEPTIONS**

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Y\_\_N\_\_

## DRIVE SHAFT GUARD

A square tube steel drive shaft loop or guard shall be installed just behind front U joint. This is designed to prevent the drive shaft from creating a dangerous situation such as hitting the ground or whipping in the event of a universal joint failure. NO EXCEPTIONS.

Y\_\_N\_\_

## SIDE IMPACT PROTECTION REQUIREMENT

A continuous 8" x 2" side impact beam shall be welded to side body and sidewall extrusions to each side of the unit where the squad bench and CPR seats are located. This side impact beam shall allow for secure and customizable mounting points for the squad bench and CPR seat seatbelts. The side impact beam shall also provide additional structure and rigidity in these seating locations in the event of an accident. This side impact beam shall be constructed of minimum 8" x 2" x .250" thick 6005-T6 aluminum. Seat belt backer plates welded or adhered in between the extrusions is unacceptable to this agency as this does not displace the energy of a side impact as effectively as a continuous side impact rail. **NO EXCEPTIONS.** Bidders must include a detailed description of their method of side impact protection for this department to adequately compare.

Y\_\_N\_\_

## CONSTRUCTION COMPLIANCE

Safety and strength of construction is a primary concern for this department. The delivered ambulance must meet the construction specifications detailed above. Failure to meet this construction method will be cause for rejection.

Y\_\_N\_\_

## COMPARTMENT & ENTRY DOOR CONSTRUCTION

All exterior compartment and entry doors shall be constructed of a single piece of .125" 5052H32 sheet aluminum. The use of extrusions for doorjamb or doorjamb is not allowed. The door profile shall be a double pan form of 2.75" total thickness. Each compartment door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental influences. Access for maintenance to the latching mechanism shall be through 2.0" mounting holes located in the upper and lower outboard edges of the inner door pan panel. A rubber grommet cap shall cover these access holes. The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods. The interior door pan of each exterior door shall be stamped with a unique alphanumeric code denoting the specific size of that door. This code shall assure the quick and exact replacement of a damaged door.

Y\_\_N\_\_

## COMPARTMENT DOOR LINER

The compartment doors inner liner shall be constructed of .063 aluminum diamond

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plate.

Y\_\_N\_\_

### EXTERIOR COMPARTMENT DEPTH

All exterior compartments shall have a clear depth of approximately 18.75."

Y\_\_N\_\_

### INSULATION - DOLPHIN/KRAFT

Prior to installation of the insulation the entire interior body interior surface will be sprayed with a heavy protective coating of sprayed in Dolphin HydroArmor latex rubber to provide sound deadening, vapor barrier and corrosion protection.

Y\_\_N\_\_

### INSULATION - SPRAY FOAM - WALLS/ CEILING/ FLOOR/ SIDES/ STEPWELL

The module shall have an expandable polyurethane spray foam type on the floor, sides and bottom of the step well of the patient compartment to provide maximum protection from changes in outside temperature. Kraft Fiberglass bats shall be installed in the walls and ceiling. The insulation shall be fire retardant, non-settling, non-hygroscopic, and mildew and vermin proof. There shall be a generous amount of undercoating applied throughout the undercarriage of the body and chassis. Undercoating must be applied according to chassis manufacturer guidelines.

Y\_\_N\_\_

### HEAT SHIELD

To further insulate and protect the patient compartment the ambulance manufacturer shall install 18 gage galvanized steel below the subfloor material to act as a heat shield. An 18 gauge galvanized steel sheet, with waterproof insulation laminated to it, shall be installed directly to the bottom of the floor tubes. This will create a sandwich style construction to further insulate the patient floor in the area of the muffler and exhaust system.

Y\_\_N\_\_

### VAPOR BARRIER

To further insulate and protect the patient compartment the ambulance manufacturer shall install an aluminum vapor barrier. A .063 aluminum sheet shall be installed directly between the flooring and the 2" x 2" floor tubes. This will create a sandwich style construction to further insulate the patient floor in the area of the muffler and exhaust system.

Y\_\_N\_\_

### FENDER INSULATOR

An additional sound deadening insulator shall be provided and installed on top of the wheel well liner. This layered rubber and aluminum material shall diminish the effects of noise created by road debris and provide additional thermal insulation for the patient compartment.

Y\_\_N\_\_

### CAB CONNECTION

The chassis cab shall be connected to the module through the use of an expanding closed cell EPDM rubber bellows covering the cab sliding window and the module sliding access window. The bellows shall be 2.75" wide in compressed state and

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capable of stretching to 4.250" without compromising its structural integrity. The bellows shall be held in place with integral 1050 cold rolled spring steel flexible cores on each edge. The water absorption rate of the material shall be less than 1% and have an operating temperature range of -40 degrees to +158 degrees F.

Y\_\_N\_\_

### MOUNTING

An Iso-mount technique shall be used to mount the ambulance body to the chassis frame. Mounting hardware shall consist of .75" x 6" 6061T6 aluminum bar stock body plates, sixteen (16) 7/16"-14 UNC threaded Grade 8 bolts, paired rubber isolators with steel cap, collared mounting nut for each mounting point and (16) 1/4" steel outriggers with (2) support gussets using grade 8 bolts. The bolts and rubber isolators are similar to the type used to mount the vehicle cab. Mounting holes in the top of the outrigger shall accommodate the mounting hardware. The .75" x 6" aluminum bar stock mounting plates shall be bolted through the upper mounting isolator with the OEM Grade 8 bolt. The bolt passes through and secures the second isolator below the outrigger flange with the collared nut. Body sub floor cross members shall be welded to the aluminum bar stock mounting plates. This combination of components provides the body with a cushioned ride and allows the body and frame to flex independently to avoid frame stress.

Y\_\_N\_\_

### COMPARTMENT DIMENSIONS

The following section represents the exterior compartment dimensions and accessories. The dimensions and accessories for these compartments were designed for the specific needs of this department. Bidder compliance to this section is located at the end of the section. Exceptions may be taken in this section as not every manufacturer can meet each compartment to the exact inch. This department will require the dimensions of each compartment they are specifying if any exceptions are taken. If no exception is taken for the entirety of this section, it shall be expected by this department that the compartments will be as specified in this document.

Y\_\_N\_\_

### LEFT SIDE COMPARTMENTATION

#### FORWARD OF REAR WHEEL WELL - D1 AND D2

A full height compartment shall be provided in the forward position ahead of the wheel well. It shall have approximate exterior dimensions of:

18" wide x 84" high

Y\_\_N\_\_

The D1 compartment shall have a solid, flush mounted, vertically hinged door, constructed of aluminum.

Y\_\_N\_\_

A low compartment (D2) shall be provided in the rearward position ahead of the wheel well. It shall have approximate exterior dimensions of:

32" wide x 42" high

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Y\_\_N\_\_

The D2 compartment shall have a solid, flush mounted, vertically hinged door. It shall be constructed of aluminum.

Y\_\_N\_\_

## REAR OF WHEEL WELL - D4

A compartment shall be provided in the area rearward of the rear wheel well. It shall have the approximate dimensions as follows:

37" wide x 60" high

It shall also have a slight notch in the upper left corner, to accommodate second action area specified. This notch shall not exceed 7" from the left side and 24" from the top of the compartment.

Y\_\_N\_\_

The D4 compartment shall have double solid, flush mounted, vertically hinged doors. Each door shall be constructed of aluminum.

Y\_\_N\_\_

## RIGHT SIDE COMPARTMENTATION

### FORWARD OF REAR WHEEL WELL - P1

An intermediate compartment shall be provided in the upper, forward position ahead of the entry/egress door that allows easy access to the interior ALS cabinet. It shall have approximate exterior dimensions of:

18" wide x 69" high

Y\_\_N\_\_

The P1 compartment shall have a solid, flush mounted, vertically hinged door, constructed of aluminum.

Y\_\_N\_\_

## SIDE ENTRY DOOR

All patient entry doors shall be constructed of a single piece of .125" 5052H32 sheet aluminum. The use of extrusions for doorjamb or doorjamb is not allowed. The door profile shall be a double pan form of 2.75" total thickness. Each door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental influences. The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods. NO EXCEPTIONS WILL BE ALLOWED.

The door shall have a FMVSS approved Tri-Mark rotary latch with a Tri-Mark locking handle and shall have a two-point rotary latch with adjustable Nader pins located on the side of the door. It shall also be equipped with a spring assisted two-directional cam-over door check. The door shall provide a clear opening of at least 32" wide and 74" high. When opened, the door shall activate the interior dome lights. Each

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access door is to be stamped with an alphanumeric code; this will enable the exact replacement of a damaged door.

Y\_\_N\_\_

### STEPWELL

The patient compartment access door shall have a full aluminum diamond plate step well. The step well must have a full 18" deep step which allows for easy entry and egress, a 9" high riser and be 32" wide to match the width of the side entry patient compartment door. The step well shall be formed entirely from fire grade aluminum diamond plate which is fully seam welded into the body at the step well area.

Y\_\_N\_\_

### DUAL SIDE ENTRY DOOR STEP

A dual step constructed of Fire Grade aluminum diamond plate shall be installed. A two step, step well is preferred in this application for ease of entry into the patient compartment. Interior entry door step wells using just one step are not desired by this department and will not be considered.

Y\_\_N\_\_

### DOOR TRIM

The door shall have a .090" aluminum panel covered the upper and lower door and full width door panel with .028" Formica, with color to match interior and shall be impervious to moisture, easily cleaned, durable, and attractive. The middle and lower portion shall be stainless steel and removable for ease of maintenance.

Y\_\_N\_\_

### STEPWELL LIGHT

Two (2) LED lights shall be provided for the curb side step well. The light shall be incorporated into an aluminum diamond plate angled bracket to allow for more complete illumination of the step well area. These lights shall be located at the sides of the step well.

Y\_\_N\_\_

### GLOVEBOX

Three (3) glove storage areas shall be provided directly above the side entry/egress door. It shall have approximate dimensions of 33" wide x 6" high and shall have three (3) flip-up Plexiglas doors with non-locking catches for easy access.

Y\_\_N\_\_

### SIDE ENTRY DOOR ASSIST RAIL

The side entry/egress entrance door shall have a 1.25" outside diameter, 45 degree ergonomic style assist handle with anti microbial protection to eliminate microbial cross contamination. Anti microbial powder coating shall inhibit the growth of bacteria, mold and fungi. Scratches and slight wear in the coating shall not change the overall protection the coating provides. **NO EXCEPTIONS ALLOWED FOR THIS REQUIREMENT**

Y\_\_N\_\_

### REAR OF WHEEL WELL - P4 AND P5

A low compartment shall be provided in the forward area behind the rear wheel well. It shall have the approximate dimensions as follows:

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22" wide x 17" high

Y\_\_N\_\_

The P4 compartment shall have a solid, flush mounted, vertically hinged door, constructed of aluminum.

Y\_\_N\_\_

A full height compartment (P5) shall be provided in the rearward area behind the rear wheel well with inside outside access. It shall have the approximate dimensions as follows:

13" wide x 84" high

Y\_\_N\_\_

The P5 compartment shall have a solid, flush mounted, vertically hinged door, constructed of aluminum.

Y\_\_N\_\_

### REAR PATIENT ENTRY DOORS

All patient entry doors shall be constructed of a single piece of .125" 5052H32 sheet aluminum. The use of extrusions for doorjamb or doorjamb is not allowed. The door profile shall be a double pan form of 2.75" total thickness. Each door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental influences. Access for maintenance to the latching mechanism shall be through 2.0" mounting holes located in the upper and lower outboard edges of the inner door pan panel. A rubber grommet cap shall cover these access holes. The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods. The interior door pan of each exterior door shall be stamped with a unique alphanumeric code denoting the specific size of that door. This code shall assure the quick and exact replacement of a damaged door. In addition, "C" channel bracing shall be added internally for additional door structural integrity.

Both rear patient entrance doors shall have an FMVSS 206 tested Tri-Mark locking handles keyed alike to the side entrance door and a Tri-Mark non-locking handle. Each rear door shall have a two-point rotary latch with adjustable .50" Nader pins with head flanges at the top and bottom with release handles on the interior faces of the doors. When opened, the rear doors shall provide an opening of at least 63" high and 50" wide. Each rear door shall be equipped with a Cast Products "grabber" style door check, which shall be located at the bottom of the door. When opened, the rear doors shall activate the interior dome lights and the rear exterior load lights. NO EXCEPTIONS ALLOWED.

Y\_\_N\_\_

### DOOR TRIM

The door shall have a .090" aluminum panel covered the upper and lower door and full width door panel with .028" Formica, with color to match interior and shall be impervious to moisture, easily cleaned, durable, and attractive. The middle portion

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shall be stainless steel and removable for ease of maintenance.

Y\_\_N\_\_

### REAR ENTRY DOOR ASSIST RAILS

The rear entry/egress entrance door shall have a 1.25" outside diameter, 45-degree ergonomic style assist handle with anti microbial protection to eliminate microbial cross contamination. Anti microbial powder coating shall inhibit the growth of bacteria, mold and fungi. Scratches and slight wear in the coating shall not change the overall protection the coating provides. **NO EXCEPTIONS ALLOWED FOR THIS REQUIREMENT.**

Y\_\_N\_\_

### REAR BODY GLOVEBOXES

Two (2) glove boxes shall be provided directly above the rear patient entrance doors, spaced evenly on each side of the rear wall. Each glove box shall have approximate dimensions of 12" wide x 9" high and shall have two (2) flip-up Plexiglas doors with roller ball catches for easy access.

Y\_\_N\_\_

### REAR BODY CLOCK

One (1) Model 4625G Digital Atomic Clock shall be provided directly above the rear patient rear entrance doors.

Y\_\_N\_\_

### SLIDING WINDOW

The entry/egress door shall be provided with a Clear Vision Brand 20" wide x 19" high horizontally sliding window. It shall have tempered, automotive, privacy safety glass and shall have a locking mechanism to keep the window panels in the desired position. A screen shall be provided, to prevent airborne particles from entering the vehicle, when the window panels are in the open position.

Y\_\_N\_\_

### FIXED WINDOWS

The rear patient entry doors shall each be provided with a 20" wide x 19" high fixed window panel. Each window shall have tempered, automotive privacy safety glass.

Y\_\_N\_\_

### EXTERIOR COMPARTMENT FABRICATION

All exterior compartments, excluding backboard compartments, shall be constructed of .100" aluminum diamond plate walls and ceilings with .125" smooth aluminum floors, formed and heliarc welded. Exterior compartments are welded to both the inside wall vertical structure and floor structure components for strength and durability. Each floor shall be "sweep out" design.

Y\_\_N\_\_

### EXTERIOR COMPARTMENT DOORS

Each exterior compartment door shall be constructed of .125" 5052H32 aluminum sheet double pan formed with a 1.5" return bend with recessed offset supporting the .063" 3003 alloy aluminum diamond plate interior liner. Extruded doors and/or doorframes are not acceptable. In addition, for maximum rigidity, 2.375" "C" channel bracing shall be added internally for additional door structural integrity. The

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exterior face of the door and the door edges shall be formed from one [1] sheet of aluminum. All doors shall be flush with the body side and shall be fully insulated with polyurethane spray foam. When opened, the doors will activate their respective compartment lights. All compartment doors shall be keyed alike. Each access door is to be stamped with an alphanumeric code; this will enable the quick and exact replacement of a damaged door. The inner door panels shall be affixed to the flange with stainless steel serrated spring washers and TX-25 Type F Torx-head machine screws.

Y\_\_N\_\_

All exterior compartment doors shall be equipped with a gas charged hold open door check.

Y\_\_N\_\_

### **EXTERIOR COMPARTMENT DOOR HANDLES AND LATCHING**

Door hinges shall be full length stainless steel #304-2B buffed and polished with a 1/4" stainless pin and shall be fastened to the door and door frame with self-locking stainless steel screws. Hinges are to be of a slotted style with a round hole on each leaf of the hinge for permanent lifetime adjustment of the doors. Hinges shall be staked, not welded, every 4" to prevent pin from moving. NO EXCEPTIONS ALLOWED. The locking mechanism shall be a Tri-Mark #13136 outside handle, a #13028 inside handle with a #12765-01 gasket for the external handle with #14229-01 and #14230-01 rotary latch and #10355U adjustable Nader pin. Latches shall be near flush with the door skin. Each latch must be capable of being locked independently with an integral exterior key lock and a key matching the locks on the curbside and rear entry doors. The latch system is to be activated by the use of a .156" zinc plated steel rod with a single point threaded adjustment mechanism. Systems operated by cables are unacceptable due to the tendency of cable to stretch or fatigue prematurely. NO EXCEPTIONS WILL BE ALLOWED. The latch and the Nader pin shall be mounted so as not to interrupt the continuous door seal. A .437" hole shall be drilled into the edge of each door adjacent to the paddle handle. This lubrication access shall be sealed with a removable plastic cap for protection of the internal mechanism.

Y\_\_N\_\_

### **EXTERIOR OXYGEN COMPARTMENT VENT**

One (1) #1031 Cast Products, polished aluminum exterior oxygen compartment vent shall be provided and installed on the door of the exterior compartment that houses the oxygen tank retention system. The vent hole shall be 3" in diameter and provide adequate ventilation for gaseous oxygen should a leak occur. A black plastic vent shall be provided and installed on the interior door liner covering the vent hole to protect it from intrusion by the elements when the door is open.

Y\_\_N\_\_

### **LOK-TYLE**

The floor and shelf of each exterior compartment shall be covered with Lok-Tyle material that shall be black in color. A Safety Yellow Lok-Tyle end piece shall be installed at the front of each compartment to clearly define the front edge of the compartment.

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Y\_\_N\_\_

## DOOR GRABBERS

A set of door Cast Products "Grabbers" shall be provided at the bottom of the rear doors. They shall be fastened to the door and doorframe with self-locking stainless steel screws. NO EXCEPTIONS WILL BE ALLOWED.

Y\_\_N\_\_

## DOOR SEALS

For optimum fit and closure, the compartment and patient entry doors shall close on a .625" W x .400" thick automotive, closed cell EDPM rubber gasket adhered to first interior surface of the double pan-formed compartment doors. The gasket seal shall be located on this surface to prevent exposure of the rotary latch mechanism to water or dirt when the door is closed.

Y\_\_N\_\_

## POWER DOOR LOCK SYSTEM - ALL PATIENT AND COMPARTMENT DOORS

The rear patient entry doors and side entry/egress door, along with all exterior compartment doors (excluding any exterior compartment drawers) and exterior ALS door, shall be equipped with a power lock that shall be activated from within the cab, within easy reach of the driver.

Y\_\_N\_\_

## POWER DOOR LOCK SWITCHES

Two (2) additional power door lock switches shall be provided and installed in the patient compartment. They shall be installed one (1) on the curbside module entry door and one (1) on the curbside rear module entry door.

Y\_\_N\_\_

## POWER DOOR LOCK ACTIVATION

The patient compartment door locks shall be wired to the chassis power door locks.

Y\_\_N\_\_

## STAINLESS STEEL DOOR SILL PROTECTION

There shall be a 20 ga. formed stainless steel compartment doorsill protection for all exterior compartments. The stainless protector shall be affixed with heavy duty double sided tape to the top surface of the doorsill and extend over the radius edge.

Y\_\_N\_\_

## COMPARTMENT ILLUMINATION

Each exterior compartment shall be illuminated with a round, Liteco incandescent lights Model #69000200. These lights shall have clear acrylic lenses and be recessed into the compartment sides and/or ceiling in a location to maximize compartment illumination. Compartments with full length adjustable or fixed shelving shall have a light located at the bottom of each shelf. Each door shall have an individual automatic switch to signal a "door or compartment open" condition and to turn on interior lighting when the door is opened. The switches shall be GE heavy duty, magnetic switches recessed mounted in the doorframe header interior to the protective door seal. Magnetic switches shall be the only switches installed in this application. Plunger or rollerball type switches shall not be accepted by the

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department because the switching hardware is exposed to outside elements and has tendencies to prematurely fail over a short period of time.

Y\_\_N\_\_

### OXYGEN TANK MOUNT

One (1) set of fully adjustable stainless Oxygen steel rings shall be provided to secure an "H" type Oxygen tank in exterior compartment D1. The oxygen cylinder retainer bracket shall be mounted to the wall of the compartment by Grade 8 bolts tapped into a .250" aluminum plate welded onto the inboard side of the compartment wall. This vehicle must meet or exceed AMD Standard 003, Oxygen Retention System.

Y\_\_N\_\_

### ADJUSTABLE SHELVES

One (1) adjustable shelf will be provided and installed in the D-1 compartment. Each shall be easily adjusted to accommodate equipment/supply requirements.

Y\_\_N\_\_

One (1) adjustable shelf will be provided and installed in the D-2 compartment. Each shall be easily adjusted to accommodate equipment/supply requirements.

Y\_\_N\_\_

Two (2) adjustable shelves shall be provided in the D4 compartment. They shall be easily adjusted to accommodate equipment/supply requirements.

Y\_\_N\_\_

### BACKBOARD DIVIDER

One (1) vertical, full height, aluminum backboard divider shall be installed in the center of the P-5 compartment. To provide protection for the equipment retained in the compartment, the divider shall be Line-X Brand coated on both sides to include a non-slip sprayed-on aluminum surface. The surface of this divider must contain no V.O.C. Or C.F.C's and shall be solvent free. NO EXCEPTIONS.

Y\_\_N\_\_

Three (3) adjustable shelves shall be provided in P-5 compartment fore of the backboard divider.

Y\_\_N\_\_

### EXTERIOR MODULE COMPARTMENT COMPLIANCE

Checking Yes to the Compliance here indicates the bidder complies to the above exterior module compartment and equipment section **in its entirety** and will provide the above mentioned compartment dimensions, accessories additional options and equipment as specified. As mentioned previously in this document, exceptions to the compartment dimensions, accessories and additional equipment and options may be taken. Exceptions will not necessarily be cause for rejection in this section as not all manufacturers can meet these compartment dimensions to the exact inch. If exceptions are taken, documented dimensions and specifications must be provided of what the bidder is choosing to provide in lieu of what is specified here. **Failure to provide this information will be cause for rejection.**

Y\_\_N\_\_

### GRAB RAIL

An exterior style 16" stainless steel grab rail shall be installed on the curbside of the vehicle to the rear of the curbside entrance door. The grab rail shall be bolted

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through the body skin and through the aluminum side structure with fender washers and lock nuts on the interior and rubber gaskets under the feet of the grab rail on the exterior. A grab rail mounted to the body skin is unacceptable.

Y\_\_N\_\_

Grab Rail, Exterior, Service Points in Patient Compartment

Y\_\_N\_\_

### REAR BUMPER

The rear step bumper shall be approximately 94" wide and step tread of 10 1/2". The bumper shall be supported with a 3" steel angle sub frame and have 1/4" steel angle outer frame construction. The bumper shall be bolted to the chassis frame rails to reduce body damage and direct impact under the body, away from the patient area should a crash occur. There shall be supports built into the bumper framing to reinforce the end pods. The height of the outer ends shall be 4" in height and have 3" radius corners. The center section of the bumper shall be 8" x 46" x 2" of an open grate diamond back material and shall flip-up for ease in loading a cot. The aluminum step shall be bolted to the sub-frame with 1/4" x 20 stainless steel bolts for ease of replacement. A .125" 3003 alloy aluminum diamond plate kick plate shall be secured to the full width of the body between the step and the threshold.

The rear bumper shall meet the requirements set forth in the AMD Standard 018-Rear Step and Bumper Test. The bumper shall be able to accommodate a 500 lb. load with maximum deflection of 1-inch and no more than 1/4-inch permanent deformation.

Y\_\_N\_\_

The removable end pods of the bumper are constructed of cast aluminum. The height of the end pods shall be 4" and shall have 3" radius corners. The surface of the end pods shall be finished with 375" slip resistant raised pattern and embossed logo. These pods shall be even with the step edge.

Y\_\_N\_\_

A protection plate on the rear face of the rear step shall be provided and tig welded to ensure secure fit.

Y\_\_N\_\_

### TOW EYES

A pair of tow eyes shall be provided at the rear of the vehicle. They shall be recess mounted into the kick plate and shall meet or exceed all standards related to towing capacities and performance.

Y\_\_N\_\_

### BODY HARDWARE

All body hardware, all compartment and entry doors shall be mounted on the body with stainless steel screws. All stainless mounting screws shall be dipped in or sprayed with electrolysis preventive solution before installation on the body. This is required to minimize the process of electrolysis. NO EXCEPTIONS ALLOWED.

Y\_\_N\_\_

### BODY PROTECTION

A full-length body rub rail shall be attached to both sides and extend from the body below the compartment doors. This rub rail shall be constructed of 1.5" x 2" x .250" "C" channel aluminum. The rub rails shall be attached to the lower margin of the

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body skirt using 1" x .25"-20 stainless steel flat head mounting bolts with stainless acorn nuts to the outside and plastic or nylon washers between the rub rail and body. For additional protection and for compliance with state highway requirements, two [2] heavy-duty composite mud flaps shall be installed behind the rear dual wheels. The mud flaps shall extend the full width of each set of dual wheels.

Y\_\_N\_\_

### FUEL ENTRY

There shall be an 8.00" x 8.00" 65 degree cast aluminum fuel filler guard recessed into the body above and behind the streetside wheel well. Steel fuel fill protectors are not acceptable. This protective bezel shall be sealed to the body to prevent spilled fuel from seeping behind the bezel and shall have a rubber grommet hole to protect the fuel cap retention strap.

Y\_\_N\_\_

### FUEL GUARD

A stainless steel plate shall be installed under the single fuel fill opening. It shall protect the paint from fuel over splash and fuel cap removal.

Y\_\_N\_\_

### RUNNING BOARDS AND GUARDS

To provide for increased road splash protection and ease of driver/technician entry and exit, fire grade aluminum diamond plate running boards with a cast aluminum manufacturer logo inserts. The insert shall act as a textured positive grip stepping surface for the driver/technician to step into the cab. Drain holes shall be in the insert to facilitate debris and water runoff.

Y\_\_N\_\_

### CORNER GUARDS

The lower rear corners of the body shall have approximately 14.5" high .063" 3003 alloy aluminum diamond plate rolled around the corner radius and terminate at the rear kick plate area.

Y\_\_N\_\_

### STONE GUARDS

The lower forward corners of the body shall have approximately 21" high, 3003 alloy aluminum diamond plate around the corner radius and terminate at the junction of the cab and the body. These stone guards shall be fastened to the body. The top edge of each stone guard shall be sealed to prevent moisture and debris from collecting behind the guard.

Y\_\_N\_\_

### FENDERETTES

Formed aluminum fenderettes shall be installed around each rear wheel well opening. They shall help diminish damage to the wheel well area of the body caused by stones and road debris.

Y\_\_N\_\_

### LICENSE PLATE

The rear license plate holder, model #LP0002-1 shall be recessed into the rear kick panel below the rear doors. It shall be constructed of polished cast aluminum and

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have two [2] top lights to illuminate the plate.

Y\_\_N\_\_

### UNDERCOATING

Ziebart brand undercoating shall be liberally applied to the entire undercarriage of the chassis and vehicle body. Undercoating shall be applied to a thickness between .062" to .125" as prescribed in KKK-A-1822F and according to Ford QVM guidelines (when a Ford chassis is specified.)

Y\_\_N\_\_

### INTERIOR PATIENT COMPARTMENT COMPONENTS

Patient Compartment Sound Levels: This vehicle shall provide an interior working environment in which the ambient noise level is less than 80 dB as measured according to AMD Standard 006, Sound Level Test Code for Ambulance Compartment Interiors.

Patient Compartment Carbon Monoxide Levels: This vehicle shall provide an interior working environment in which the carbon monoxide level is less than 10 ppm as measured in accordance with AMD Standard 007, Carbon Monoxide Levels for Ambulance Compartment Interiors.

Y\_\_N\_\_

### CABINET GLASS

All cabinet doors incorporating acrylic glass, as sliding windows shall have .250" thick smoked acrylic Plexiglas® as the standard material.

Y\_\_N\_\_

Any hinged Cabinet glass shall be smoked acrylic 3/8" thick Plexiglas.

Y\_\_N\_\_

### STAINLESS STEEL ROUND LATCH

Stainless Steel Round Southco locking latches shall be provided on each door where applicable.

Y\_\_N\_\_

### CABINETRY

The patient compartment cabinetry shall be constructed of single panels or combinations of .750" 7-ply cabinet-grade plywood, .50" 5-ply cabinet-grade plywood, .250" 3-ply plywood and .125" plywood paneling materials. The combinations of materials selected are dependent upon the intended function of the combination; i.e. .750" plywood or panels or .50" plywood for load bearing or supporting structure, .50" plywood for non-supporting dividers, and .250" and .125" material for backing and underlayment. Materials and material combinations shall be selected to provide the greatest strength and durability while minimizing the overall weight of the cabinet components. Solid wood cleat-stock shall be used to support joints or provide spacers between specific cabinets and for the attachment of certain cabinet accessories. To diminish the potential for surface cracking of laminate in high stress areas, an underlayment of .125" plywood paneling shall be applied to cabinet faces prior to the application of the finishing facial laminate. Cabinet panels shall be joined-fastened by a combination of methods dependent upon the function of the structures being joined, to include adhesive, staples and screws.

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All exposed surfaces shall be laminated with a minimum of .028" Formica® laminate, white for cabinet interiors and a standard color for the cabinet exterior, which shall be selected by this department, to compliment the colors of upholstery and flooring.

All vertical outside corners shall be capped with 3.25" radius aluminum extrusion and overlaid with a minimum of .028" laminate to form a large radius "safety corner". Protruding lower edges of overhead storage shall be finished with radius metal or plastic moldings or padded vinyl.

The cabinet faces shall be constructed to provide the maximum size of opening for each cabinet. The openings shall be fitted with extruded aluminum, dual-track, picture-frame type structure with sliding .250" thick Plexiglas® windows or hinged Plexiglas® doors. The shelves included in specific cabinets shall be constructed of .50" 5-ply, cabinet grade plywood laminated with a minimum .028" Formica®. Each shelf shall have an anodized aluminum lip a minimum of 1" in height. Shelves shall be infinitely adjustable within the specific cabinet by means of .437" x .812" aluminum C-channel, adjustable locking bolts and "L"- brackets to which each corner of the shelf is attached. Spring clip attachment and suspension of shelves is not acceptable.

All cabinetry interior seams shall be sealed to protect the cabinet material from seepage of spilled liquids. All interior materials, cabinetry, vinyl, laminates and foam shall meet or exceed FMVSS 302, Flammability of Interior Materials.

Y\_\_N\_\_

### **PATIENT COMPARTMENT CABINET DRAWER AND DOOR FACES**

All drawers and door faces in the patient compartment shall be an overlay style to ensure proper and uniform fit and seal. These overlay style faces shall also be easy to clean and shall have no trim around the edges. Doors and drawer faces that are framed are not acceptable to this department.

Y\_\_N\_\_

### **COUNTERTOPS**

The countertop in the primary and secondary action areas of the patient compartment shall be Corian brand material. They shall have a radius edge and shall be scratch and dent resistant.

Y\_\_N\_\_

The countertop Corian brand color shall be Dusk.

Y\_\_N\_\_

### **PATIENT COMPARTMENT LIGHTS**

Patient compartment lighting shall consist of eight (8), round LED dome lights with polished bezels, switched from the action area control console. These lights shall be high intensity LED with clear lenses. The lights shall be activated in separate banks of four (4) lights each. There shall be one (1) bank over the squad bench and one (1) bank over the primary cot. Two (2) switches shall be provided in the action area console, each with high/off/low positions for independent operation of each bank. All eight (8) LED dome lights shall be activated on "LOW" when either the curbside entry door or rear entry doors are opened. There shall be a three-minute time delay

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system activated by opening the entry doors. This system shall be battery hot and turn the lights "OFF" at the three-minute pre-set time. No ceiling light shall protrude into the patient compartment by more than 1.25".

Y\_\_N\_\_

A rotary timer system shall be provided for the streetside bank of lights. The system shall be preset to automatically turn the lights off after activating. The timer shall be from 5-60 minutes.

Y\_\_N\_\_

### ACTION AREA LIGHT

An LED light shall be provided and installed in the primary action area. This light shall have a manual "on/off" switch.

The patient compartment interior lights must meet the requirements set forth in AMD Standard Test 016 Patient Compartment Lighting.

Y\_\_N\_\_

### CEILING HEADLINER

The patient compartment headliner shall be constructed of a durable, white Sinocore material. The headliner shall be securely affixed to the roof bows. There shall be a full-length inspection access/wire race in the center of the ceiling, which provides access to the wiring harness and antennae bases/leads. In areas where the overhead assist rails are mounted, a 1/3" aluminum plate shall be installed. The access shall have removable padded vinyl covers. There shall be no wood, Formica or Fiberglass used for the purpose of the ceiling.

Y\_\_N\_\_

### FLOORING

A one-piece 3/4" plywood subfloor on all patient area floors less than 144" in length shall be installed on top of the .090" thick aluminum sheet. The 3/4" plywood sheet shall be securely fastened with sheet metal screws long enough to penetrate the 2" x 2" body tubes below the .090" aluminum sheet. This process shall create a sandwich effect for long lasting durability and a solid surface. All screws shall be filled and sanded to provide a smooth surface for the linoleum covering. Floor lengths longer than 144" shall include a two-piece plywood underlayment. Vinyl, anti-skid, commercial grade, heavy-duty, non-porous floor covering shall be applied to the entire floor in a one-piece seamless application. This commercial inlaid sheet vinyl shall have minimums of nominal overall thickness of 2.03 mm. The flooring shall comply with ASTM F 970 (modified) in regard to static load bearing and D-2047 James Test for slip resistance. There shall be a 5" roll-up splashguard installed on the streetside cabinet wall and the squad bench face. A waterproof sealant shall be applied between the cabinetry and the floor at the cabinet and floor covering juncture. Cove molding shall be installed around the base of the ALS cabinet. The cove molding shall conform to the requirements set forth in Section 3.10.11 of the KKK-A-1822F Federal Ambulance Specifications. Bid proposals not including this in the quote or detailed specifications will not be considered.

This floor shall exceed the requirements set forth in AMD Standard 020 Floor Distributed Load Test for a bariatric cot (800 lbs.) Flooring structures not meeting this requirement will not be accepted by this department. **NO EXCEPTIONS**

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Y\_\_N\_\_

## REAR THRESHOLD

There shall be a 6" wide, 16 ga. formed, waterfall style stainless steel threshold protector installed on the rear interior of the body. The protector shall run the entire width of the floor at the door opening. This style shall have no angles or contours which shall provide limited puddling and collection of debris as well as assistance with cot loading. A 2" wide, adhesive-backed non-skid material shall be installed on the threshold piece to assist with safe entry and exit from the vehicle.

Y\_\_N\_\_

## INTERIOR PROTECTION

A stainless steel riser shall be provided on the lower half of the squad bench, to just below the seating surface, and the streetside cabinet face, up to an approximate height of 13" from the floor. It shall protect the vertical surfaces from scratches, marks and debris and shall be easily cleaned.

Y\_\_N\_\_

## INTERIOR COLORS AND MATERIAL

The Formica color for all cabinets within the patient compartment shall be White #949.

Y\_\_N\_\_

The Formica shall have a matte finish.

Y\_\_N\_\_

A Top color stripe shall be provided.

Y\_\_N\_\_

The Formica color for the 4" accent stripe within the patient compartment area shall be Marine Blue #914.

Y\_\_N\_\_

The LonPlate II brand flooring color shall be Gun Metal (dark gray) #424.

Y\_\_N\_\_

The upholstery color shall be Royal #MV115 (Bright Blue).

Y\_\_N\_\_

## ACTION WALL

The action area wall shall be a polished white Formica material to facilitate easy cleanup and an aesthetically pleasing appearance.

Y\_\_N\_\_

## LEFT SIDE CABINetry

### ACTION AREA

An efficient and accessible action area shall be located to the right of the attendant seat. Oxygen and suction/aspiration equipment outlets shall be readily accessible. It shall provide a counter for the attendant's use. The counter shall have a 3/4" lip to prevent items from falling. For attendant's safety, the foremost vertical leading edge and top horizontal edge of the action area cabinet shall be trimmed with fabric backed padded vinyl. The foam padding shall be 3/8" high-density foam and shall have a R-factor of 0.25. All seams are to be machine stitched for proper fit and durability.

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Y\_\_N\_\_

## ACTION AREA CONTROL PANEL

All patient compartment lighting, environmental equipment and other indicators and controls critical to the care of the patient shall be controlled from a switching console located to the right side of the rear facing technicians seat. The switch console shall be located in a cabinet face cut at an approximate 30-degree angle above the action area and below the overhead cabinet. The switch panel is designed to provide easy operation and high visibility from either the rear facing Technicians seat or side mounted CPR seat. To facilitate easy troubleshooting and maintenance or repair, the controls for all ambulance conversion functions shall be basic, automotive style, non-programmable type controls. This type of control mechanism can be easily repaired by department maintenance personnel and does not require electronic interaction with a third party for programming or problem solving. The switches shall be, moisture resistant, Euro-style, rocker-type, and shall be UL listed and CSA approved. Each switch shall have one or more LED indicator lights integral to the switch rocker indicating the function status. Switches may be simple ON/OFF type or multi-position rockers or rotary, stepped-position switches, depending upon their specific function. The switch function legends shall be engraved plastic inserts. The backlighting shall light the words themselves rather than the background. Backlighting and switch perimeter lighting shall be accomplished with electro-luminescent light strips attached to the backside of the switch panel. This type of light source shall be used for consistent light output, low amp draw, and extended service life. The switch panel shall contain the following switches and controls:

Heat/Cool Fan Speed Control: Rotary, stepped-position control selecting Hi, Med, Lo, Off

Heat/Cool Mode Selector: Two-position rocker control selecting Heating or Cooling function

Left Dome Lights: Three-position rocker control selecting Lo, Off, Hi for curbside dome lights

Right Dome Lights: Three-position rocker control selecting Lo, Off, Hi for streetside dome lights

Suction Pump: ON/OFF control selecting Thomas suction pump

Spare Switch: (1) Spare switch and (3) Blank positions for future use

Patients Status Buzzer, If Specified: Push button control activating buzzer to signal change in patient status

Patient Status Indicator Lights, (3) Locking push button controls, Red, Yellow, Green, selecting indication of patient status, signal to front switch panel

Exhaust Fan Control: Rotary, stepped-position control selecting Hi, Med, Lo, Off for patient compartment exhaust fan.

Y\_\_N\_\_

## SPEAKER SYSTEM

Two (2) speakers shall be provided and mounted in the rear module ceiling. They shall be connected to the cab AM/FM radio. A separate volume control and fader shall be provided in the rear action area.

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Y\_\_N\_\_

## ACTION AREA OVERHEAD CABINET

A cabinet shall be installed above the action area.

Y\_\_N\_\_

It shall have "restocking type" Plexiglas doors. The doors shall slide and flip-up for easy, full width access. The restocking doors shall be constructed in such a manner to prevent twisting, yet provide easy opening when the restocking cabinet face is lifted.

Cabinet faces shall be secured with mechanical fasteners at the corners of each frame. A center piece of .125 aluminum shall be installed in the inside running vertically from the top center to the bottom center of the cabinet frame. A full length hinge shall run horizontally along the top of the hinged compartment attached to a solid bracing surface (aluminum tube or wood structure) to assist in keeping the restocking cabinet from twisting. Gas shocks shall be installed on each end of the cabinet to assist in opening the cabinet.

In order to prevent accidental opening while the vehicle is in motion, the bottom of the cabinets shall be equipped with two positive catching hold-down locks that require a locking motion by the attendant to ensure the cabinet is secure when the vehicle is in motion. Spring-type catches or catches that automatically "lock-in" shall not be considered due to the failure of the catch over time.

Y\_\_N\_\_

A full length, aluminum handle shall be installed on each door.

Y\_\_N\_\_

## WRITING DRAWER BELOW ACTION AREA

A writing drawer shall be provided below the action area, in the rearward position. It shall have approximate dimensions of 2 3/4" high x 14" wide x 15" deep. It shall have a Plexiglas writing surface with flush mounted hinges at the rearward section, so that when the tray is full extended, the writing surface can be lifted to allow easy access to a storage area below. In the closed position, it shall be flush with the front edge of the cabinetry. The storage area shall be large enough to hold writing instruments, a bound notebook, calculator or small miscellaneous items.

Y\_\_N\_\_

## SHARPS AND WASTE COMPARTMENT

A sharps/waste compartment shall be provided in the area just rearward of the CPR seat. It shall be flush mounted, with a horizontal hinge at the bottom edge, to allow for tilt out access by the occupants. It shall have approximate dimensions of 15" wide x 9" high and shall have a Phenolic with Formica overlay, tip-out door. A round Southco latch with a hold open device shall be provided on the door.

Y\_\_N\_\_

## SINGLE CABINET

There shall be a single cabinet above the CPR seat. The AMD Standard 025 head protection shall be adhered to. NO EXCEPTION

Y\_\_N\_\_

It shall have flip-up 3/8" Plexiglas doors with hold-open devices.

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Bidder Complies

Y\_\_N\_\_

A stainless Steel Round Southco latch shall be provided on each door.

Y\_\_N\_\_

## SECOND ACTION AREA

The 2<sup>nd</sup> Action Area, the Technicians secondary work center, shall be an open countertop designed for efficiency and accessibility. The action area shall be located to the right of the CPR seat in the streetside cabinet wall and accessible from the Squad Bench also. The counter top shall have dimensions of approximately 23.5" wide x 18" deep with a .750" lip to prevent items from sliding off the work surface. The countertop surface and lips shall be laminated with a minimum of .028" Formica<sup>®</sup> and both horizontal and vertical corner seams shall be sealed the full length of the seam to prevent seepage of spilled liquids. For the Technicians safety, the lower horizontal edge of the action area rear overhead cabinet shall be trimmed with fabric backed padded vinyl. The foam padding shall be .375" thick high-density foam.

Y\_\_N\_\_

## OVERHEAD CABINET

A cabinet shall be installed above the supply cabinet and shall be provided with one (1) adjustable shelf.

Y\_\_N\_\_

It shall have "restocking type" Plexiglas doors. The doors shall slide and flip-up for easy, full width access. The restocking doors shall be constructed in such a manner to prevent twisting, yet provide easy opening when the restocking cabinet face is lifted.

Cabinet faces shall be secured with mechanical fasteners at the corners of each frame. A center piece of .125 aluminum shall be installed in the inside running vertically from the top center to the bottom center of the cabinet frame. A full length hinge shall run horizontally along the top of the hinged compartment attached to a solid bracing surface (aluminum tube or wood structure) to assist in keeping the restocking cabinet from twisting. Gas shocks shall be installed on each end of the cabinet to assist in opening the cabinet.

In order to prevent accidental opening while the vehicle is in motion, the bottom of the cabinets shall be equipped with two positive catching hold-down locks that require a locking motion by the attendant to ensure the cabinet is secure when the vehicle is in motion. Spring-type catches or catches that automatically "lock-in" shall not be considered due to the failure of the catch over time.

Y\_\_N\_\_

A full length, aluminum handle shall be installed on each door.

Y\_\_N\_\_

## SUPPLY CABINET

A supply cabinet shall be provided in the rearward section of the streetside interior, below the overhead cabinet. It shall have two (2) adjustable shelves installed.

Y\_\_N\_\_

It shall have sliding double Plexiglas doors.

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Y\_\_N\_\_

A full length, extruded aluminum handle shall be provided on each door.

Y\_\_N\_\_

## PATIENT COMPARTMENT EXHAUST VENT

Detmar #751 A three-speed power exhaust vent having a 240 cfm air flow rating shall be installed in the upper left side rear wall, with approximate dimensions of 6" wide x 8" high. The resistor coil shall be mounted in the fan air flow. This shall be controlled from a control panel in the patient compartment. A positive closure to prevent destabilization of the patient compartment shall be provided.

Y\_\_N\_\_

## OXYGEN COMPARTMENT

The oxygen cylinder storage compartment shall be located in the streetside front compartment D1. Access to the regulator, contents gauge, and cylinder shut-off valve from the interior of the vehicle shall be by means of a hinged .250" thick Plexiglas® door in the forward wall of the action area. This opening shall be trimmed with a black, ABS formed bezel to protect the Technician's hands and provide a finished opening. The compartment shall be vented through the exterior door with a minimum 28 square inch opening. The vent opening shall be covered with a polished aluminum vent cover. It shall be attached with stainless screws. The oxygen cylinder retention bracket shall be mounted to the wall of the compartment by Grade 8 bolts tapped into a .250" aluminum plate welded onto the inboard side of the compartment wall. This retention bracket must meet or exceed AMD Standard 003, Oxygen Retention System. The finished oxygen system including regulator, contents gauge, hoses, outlets and flow meter must meet or exceed the requirements of AMD Standard 015, Ambulance Main Oxygen System Test.

Y\_\_N\_\_

## WIRING MODULE

A boxed style cabinet behind the rear facing Technician seat shall house the electrical components. Solenoids, relays, circuit breakers, etc. shall be on a module disconnect panel behind a door measuring approximately 49" high x 10" wide. Ample venting shall be supplied.

Y\_\_N\_\_

The cabinet shall have a vertically hinged Phenolic with Formica overlay door and shall be provided with a locking stainless steel round latch. This door shall hinge on the right side for ease of maintenance and repair.

Y\_\_N\_\_

## PASS-THROUGH

There shall be a crawl-through access between the chassis cab and body

An aluminum partition wall framed with .125" x 2" x 2" aluminum tubing placed on 16" centers and plated with .060" aluminum formed and welded to the roof, both sides, and floor shall be installed. The patient compartment side of the partition shall be covered with 1/4" plywood laminated with a minimum of .028" plastic. The driver's side of the partition shall be covered with the OEM wall as well as a mildew resistant marine style carpet of a color that matches with the cab interior colors.

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Y\_\_N\_\_

## INTERIOR FINISH FOR CAB TO MODULE BELLOWS

The interior finish of the cab to module bellows shall be carpet. The ends shall be wrapped and tucked with each corner stitched for an OEM automotive style finish.

Y\_\_N\_\_

## EQUIPMENT FURNISHED

The ambulance cab shall be equipped with an OEM supplied in-dash air conditioner and a hot water heater. The patient compartment shall be equipped with a combination hot water heater/air conditioner and a power exhaust vent. Front and rear heaters and air conditioners shall operate as separate and independent environmental systems. The controls for the rear environmental systems shall be located in the action area switch panel. The addition of the rear HVAC system shall have no deleterious effect upon the chassis system and especially the windshield defroster system as described in FMVSS 103, Windshield Defrosting and Defogging System.

Y\_\_N\_\_

A combination heater/air conditioner having an air output of 650 cfm at 0 static pressure, a cooling capacity of 32,000 BTU and a heating capacity of 35,000 BTU shall be installed above the walk-through door on the front bulkhead. There shall be two insulated plenums running the full length of the modular body in the ceiling with (4) adjustable outlet vents in each plenum. There shall also be one adjustable outlet vent on the front bulkhead. This system shall be certified to KKK standards by a third party test facility and a copy of the test results shall be included with the bid **NO EXCEPTIONS**.

Y\_\_N\_\_

The patient compartment heat and air conditioning shall be controlled and maintained through a digital, manually controlled Pro Air Advantage Series brand, thermostat.

Y\_\_N\_\_

## ALS CABINET

An Advanced Life Support cabinet shall be provided in the right side of the forward wall. It shall be divided into sections to accommodate the storage of sensitive equipment and supplies, such as ALS equipment, Laerdal charger, medical boxes, etc. The ALS cabinet shall be finished with the same material as the other cabinets. Unless otherwise specified, all divided sections shall be accessible from the outside exterior corresponding compartment. A rubber floor mat shall be installed on each divided section (including any shelves if specified).

The upper ALS shall have a Phenolic with Formica overlay, flip-up door with locking SouthCo latch. The door shall have a hold open device.

The lower ALS shall have dual Phenolic with Formica overlay doors with Plexiglas inserts. The compartment shall have two [2] adjustable shelves mounted on "C" channel style tracking.

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Y\_\_N\_\_

## HEALTH CENTER

An open type "health center" compartment shall be located rearward of the walk-through to the cab on the curbside, along the backside of the first exterior compartment. The materials used shall be the same material as the other cabinets. It shall have approximate height and width dimensions of the first exterior compartment. The depth shall be approximately 6" (distance between the walk-through opening and the back wall of the first exterior compartment). Two (2) adjustable shelves shall be provided mounted on "C:" channel tracking shall be provided.

Y\_\_N\_\_

## ALS COMPARTMENT COMPLIANCE

The ALS compartment specified above is designed with this department's particular needs in mind. Checking Yes indicates the ALS compartment bid matches the ALS cabinet specified here.

Y\_\_N\_\_

## VACUUM FORMED UPHOLSTRY

All seating and backrests (including the technicians seat) in the patient compartment shall be constructed of 60 ounce vacuumed formed, seamless vinyl.

Y\_\_N\_\_

## ATTENDANT SEAT

A rear-facing, high-back attendant seat shall be located at the head end of the primary cot. The material shall be sixty (60) ounce vacuumed formed, seamless vinyl compliant with OSHA regulations for easy removal of blood-borne pathogens. The seat shall be mounted on a powder-coated black two (2)-position swivel base with the ability to lock in the forward and rear facing positions and shall be securely bolted through the subfloor structure. The seat shall incorporate a built-in Child Safety Seat equipped with a five (5)-point harness. An integrated three (3)-point, retractable adult lap/shoulder ALS seat belt shall also be provided. The mounting hardware, seatbelt materials and configuration shall be in compliance with the most current applicable revision of FMVSS and KKK-A-1822. Seating constructed of or containing cloth, machine-stitching and/or welt shall not be allowed. NO EXCEPTIONS

Y\_\_N\_\_

## CPR SEAT

To the rear of the first action area, there shall be a bench type CPR seat with an approximate 26" width. This area is intended for use as a technician seat for administering aid to a patient when the center mount cot position is used. The seat cushion must be a minimum of 3" thick x 18" deep x 22" wide.

Y\_\_N\_\_

## STORAGE UNDER CPR SEAT

There shall be a storage area below the CPR seat. This area shall be accessed via a flip-up CPR seat cushion.

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## FIXED CPR SEAT BACKREST

Y\_\_N\_\_

The CPR seat shall have a fixed backrest with a full height cushion.

Y\_\_N\_\_

## CPR SEAT PADDLE LATCH

There shall be a paddle latch for the CPR seat.

Y\_\_N\_\_

## SQUAD BENCH

The squad bench shall be 22" deep x 73" wide and have split lids with storage under the forward section. The front face of the squad bench shall be fabricated from 3/4" plywood. The forward lid shall have a gas prop style hold-open device and a latch that automatically holds the lid closed (preventing opening in case of accident). The lid shall automatically open when the latch is released. Three [3] sets of retractable seat belts are required for seated passengers. The retractors shall be automotive style with plastic housings. The lid will be fitted with a removable cushion covered with a heavy grade fabric backed vinyl that meets FMVSS 302. A matching full-length backrest will be mounted on the wall behind the squad bench.

The flooring of the storage under the squad bench shall be lined with a black textured rubber automotive style mat permanently adhered to the floor.

Y\_\_N\_\_

The squad bench backrests shall be comprised of two (2) full width x 3" thick x 8" high protective pads. One (1) shall be mounted approximately 10" above the bench seat and be attached to the curbside wall. Both backrest pads shall be easily removed for cleaning and reinstalled without special tools.

Y\_\_N\_\_

No Posts and Cups on the Squad Bench are required for this unit.

Y\_\_N\_\_

## SQUAD BENCH CARGO NET

A cargo net shall be installed at the head end of the squad bench. This net shall be securely mounted from floor to ceiling and also to the vertical wall through 1/4" aluminum backer plates. This net must not be manufactured by the ambulance manufacturer but by a 3rd party certified to manufacture and distribute restraint systems. All equipment used in the manufacturing process must simulate dynamic, static and environmental conditions to insure compliance with SAE and FMVSS regulations. Individual components shall be pre and post tested to ensure product integrity. **NO EXCEPTIONS ALLOWED FOR THIS REQUIREMENT**

Y\_\_N\_\_

## REINFORCEMENT BAR

Reinforcement shall be installed in the walls of the module for the installation of a cargo net, or other such device. This reinforcement shall be made of flat bar. **NO EXCEPTIONS ALLOWED FOR THIS REQUIREMENT**

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Y\_\_N\_\_

## SHARPS/WASTE CONTAINER

A sharps/waste container shall be installed in the forward section of the squad bench riser. It shall have an oval opening for easy disposal of sharps and waste material and shall have access to remove contaminants via a slide-out drawer with non-locking latch.

Y\_\_N\_\_

## SEATBELT BUCKLES ON SQUAD BENCH FACE

Three [3] sets of retractable seat belts shall be installed on the face of the squad bench to restrain a patient on a secondary litter.

Y\_\_N\_\_

## SQUAD BENCH OVERHEAD CABINET

A cabinet shall be located over the squad bench at the ceiling level, rearward of the entry/egress door opening. This cabinet shall be divided into two (2) separate sections. The cabinet shall be finished in the same material as the rest of the interior cabinets. The AMD Standard 025 head protection shall be adhered to. NO EXCEPTION

Y\_\_N\_\_

There shall be two (2) flip-up 3/8" Plexiglas doors.

Y\_\_N\_\_

A stainless Steel Round Southco latch shall be provided on each door. Each door shall have a hold open device.

Y\_\_N\_\_

## INSIDE/OUTSIDE ACCESS TO P-5

Inside/outside access shall be provided to exterior compartment P-5 through a Formica covered Phenolic door with a Plexiglas insert. The door shall be vertical hinged, rearward. It shall allow easy access to equipment and supplies from either the inside rearward section of the vehicle or the outside.

It shall have a round stainless steel SouthCo locking latch.

Y\_\_N\_\_

## IV HOLDERS

Four [4] ceiling mounted Cast Products 2008-1 recessed IV holders shall be supplied. These shall be located at the head and foot areas, two [2] over the squad bench and two [2] over the primary cot. They shall have a rubber, foldaway storage when not in use. Each holder must have the capacity to hold two [2] bottles and have Velcro securing straps.

Y\_\_N\_\_

## IV WARMER

One (1) 12 volt IV Smithworks warmer shall be provided and hard wired to a 12 volt power source. The location shall be determined at the pre-build meeting.

Y\_\_N\_\_

## COT MOUNT

A Ferno-Washington 175-3 single position, removable cot mount shall be supplied

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(department shall specify model number for positioning during pre-construction conference). Additionally, this vehicle must meet or exceed AMD Standard 004, Litter Retention System.

Y\_\_N\_\_

The cot mounts shall be located in the center of the patient compartment floor area, as viewed from the rear of the vehicle.

Y\_\_N\_\_

### REAR ENTRY ASSIST HANDLES

Two (2) black molded assist handles shall be provided and securely fastened just inside the rear patient compartment. The handle shall be mounted in a location as to assist personnel exiting and entering the rear of the vehicle. Assist handles fastened with only self-tapping machine screws are not acceptable.

Y\_\_N\_\_

### ASSIST RAILS

One [1] 90" long, 1.25" diameter, overhead grab rail with anti microbial protection shall be provided and securely fastened to the ceiling over the primary cot. One [1] 60" long, 1.25" diameter, overhead grab rail with anti microbial protection shall be provided and securely fastened over the squad bench. The grab rails shall be fastened with bolts, washers and nuts of the appropriate dimension, through the interior ceiling panel and through the .090" aluminum accessory plate welded into the roof structure. Assist rails fastened with self-tapping machine screws are not acceptable. These grab rails must meet or exceed AMD Standard 008, Load Test for Ambulance Patient Compartment Grab Rail.

Y\_\_N\_\_

### SIGN

Two self adhesive "NO SMOKING OXYGEN EQUIPPED" and "FASTEN SEATBELT" sign (1) shall be installed in the 1st action area.

Y\_\_N\_\_

### OXYGEN

The medical oxygen system shall be capable of storing and supplying a minimum of 3000 liters of oxygen. A suitable high-pressure hose shall be provided. The concealed oxygen supply hose shall be .250" ID, .50" OD nylon base with polyester fiber reinforcing. This electrically conductive hose shall be certified to 1,875 psi and have a 7,500 pound burst rating. The fittings shall be DISS and flare, and be securely crimped to the barbed fittings by means of compressed copper sleeves. Oxygen supply hose shall be routed through the ceiling of the ambulance body and be secured with non-abrasive plastic "C" clamps. The entire oxygen system shall be subjected to a 200-psi leak test for 24-hours before installation of panels or covers that may obscure or hide the system components. After the vehicle is completed, a test as prescribed by AMD Standard 015 shall be conducted for a period of two (2) hours to insure system integrity. Each outlet shall be checked for 100LPM flow at 50 psi. This test shall be performed using nitrogen gas to purge the lines of all moisture and foreign debris. Upon completion of the test, the lines shall be bled free of nitrogen and capped. This medical oxygen system shall meet or exceed AMD Standard 015, Ambulance Main Oxygen System Test.

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The oxygen system shall have three (3) outlets, (1) on action area wall and (1) over squad bench at the head end of the overhead cabinet and (1) in the ceiling. The department shall specify the brand of quick-connectors to be used. A compartment shall have fully adjustable stainless steel rings for the O<sub>2</sub> tank. The rings shall be located in the front of the compartment (tank will be provided by the department).

Each outlet shall be covered with a protective, unbroken seal specifically detailed with the manufacturer's logo and a notice of testing. After proper testing, this seal is noticeable proof the outlet has not been tampered with prior to delivery. NO EXCEPTIONS

Y\_\_N\_\_

Oxygen outlets to be Amvex brand with Ohio style fittings. The oxygen outlets shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen outlets.

Y\_\_N\_\_

One (1) gravity type Thorpe tube oxygen flow meter shall be provided. The flow meter shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen flow meters.

Y\_\_N\_\_

One (1) additional Flo-Tec brand, 25 liter oxygen flow meter shall be provided and shipped loose.

Y\_\_N\_\_

### **REGULATOR**

A 50 psi, preset medical oxygen regulator shall be provided and installed on the supply end of the oxygen system hose. This regulator shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen flow meters. Regulators that are shipped loose shall not be accepted.

Y\_\_N\_\_

### **OXYGEN CONTENT GAUGE**

A digital oxygen content gauge shall be provided and wired to the rotary timer.

Y\_\_N\_\_

### **ELECTRIC OXYGEN SHUT OFF**

An electric shut off switch for the oxygen system shall be provided and installed in the rear action area switch panel. The system shall include a manual bypass.

Y\_\_N\_\_

### **SUCTION AND ASPIRATION SYSTEMS**

An SSCOR Model 20002/22002 suction aspirator system with 1200 ml disposable canister, injection molded plastic bracket and wall-mounted vacuum control shall be supplied and installed in the 1<sup>st</sup> Action Area. An electric suction pump shall be supplied and installed in the right hand corner of the streetside D2 compartment and be covered with a protective metal grating. The self-sealing vacuum outlet shall be mounted on the action area wall next to the oxygen outlets. To prevent premature fatigue of the suction plumbing, the line from the vacuum pump to the wall outlet shall be .375" I. D. double braided neoprene hose. This suction aspirator system shall have the capability of attaining a vacuum of 300 millimeters of mercury within

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four (4) seconds. The vacuum control regulator panel shall be installed on the action area wall adjacent to the vacuum outlet and the oxygen outlets. This control panel shall contain a vacuum gauge calibrated on a dual scale, to read vacuum pressure in increments from 0 millimeters of Mercury or 0 inches of Mercury to 750 mmHg or 30 inHg. A quarter-turn adjustment vacuum control and shut-off valve to adjust the vacuum levels or to discontinue suction immediately shall be integral to the control panel housing the vacuum gauge. The system as provided, shall include one (1) 10-foot length of transparent non-kinking clear plastic tubing and an operator's manual. This suction aspirator system shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical suction aspirator systems.

Y\_\_N\_\_

### **SHARPS/BIO-HAZARD**

A sharps container with a crash stable mounting bracket shall be supplied and shipped loose. A biohazard container with lid and twelve [12] red biohazard bags shall be shipped loose for installation by the department.

Y\_\_N\_\_

### **PATIENT CODE SIGNAL SYSTEM**

In the action area switch console there shall be three [3] colored switches (red, yellow and green) that shall activate corresponding indicator lights in the driver's switch console. In addition, there shall be a switch in the action area switch console that activates a buzzer in the driver's compartment. These lights and buzzer shall be used to notify the driver of any change in the patient's status.

Y\_\_N\_\_

### **RADIO EQUIPMENT CONNECTIONS**

Two (2) 10-gauge power and two (2) ground wires, two (2) RG58U coax cables, and two (2) PL 259 connectors shall be installed as "pre-wires" for the installation of radio communications equipment. Power, ground, and coax shall be terminated and bundled one (1) under the front switch console and one (1) behind the primary action area wall. There shall be an 18" service loop at the antenna base locations and a 36" service loop at the terminations in the cab. The PL259 connectors shall be shipped loose in the New Vehicle Owners Manual pocket.

Y\_\_N\_\_

### **RADIO EQUIPMENT**

One (1) cellular phone base, one (1) 10-gauge power, one (1) ground wire, one (1) RG58U coax cable and one (1) PL 259 connector shall be installed. Power, ground and coax shall be installed behind the passenger seat. There shall be an 18" service loop at the antenna base and a 36" service loop at the termination.

Y\_\_N\_\_

### **FIRE EXTINGUISHERS**

Two (2) 5 pound rated ABC fire extinguishers with mounting brackets shall be furnished with the ambulance. These shall be shipped loose to allow the department to install in the desired locations.

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Y\_\_N\_\_

## DOT TRIANGLES

Safety triangles approved by the United States Department of Transportation shall be shipped loose with the completed ambulance.

Y\_\_N\_\_

## TOUCH UP PAINT

Touch-up paint shall be supplied with the completed unit. One bottle of touch up paint shall be provided for each color of paint applied to the unit. The paint container shall include the paint number for future reference.

Y\_\_N\_\_

## MODULE SURFACE PREPARATION

A corrosion inhibitor shall be used on specified exterior surfaces and on specified fasteners, hinges and accessories that are subject to the effects of corrosion due to the electrolytic process that occurs between dissimilar metals. The product, designated as ECK, is a petroleum-based substance with a very slow rate of desiccation. The substance functions as a barrier to water thus minimizes the electrolytic process. It shall be applied in the following conditions and to the following accessories and fasteners:

1. Behind stone guards or any other surface area where there
2. On light assemblies utilizing self-tapping mounting screws
3. On screws and screw holes for any accessory whose holes
4. On the body surface when any accessory without a rubber

ECK shall not be applied in the following conditions:

1. When mounting any accessory that has a rubber or composite gasket.
2. On light assemblies, which have, plastic inserts for mount

Y\_\_N\_\_

## PAINT

Prior to initiating the surface preparation process, all hardware, handles, light fixtures, door hinges, corner trim, etc. shall be removed from the body. Additionally, any portion of the chassis, which does not require refinishing, shall be protected from the ensuing process.

To rid the aluminum body of any extraneous materials or material impurities the entire surface shall be washed and wiped dry with a PPG certified wax and grease remover. Excess weld material shall be removed by grinding all welds, seams, and any other body imperfections. The entire surface shall then be sanded with 80 - 150 grit dry sandpaper to provide good adhesion for any fillers and primers, sanding with 150 grit or finer as a final sand. The required areas shall be filled with approved PPG premium lightweight filler and sanded smooth. A premium two component glazing putty shall be applied directly over these areas to ensure adequate base for application of primers.

Before final cleaning of the metal surfaces before painting, any new holes shall be drilled prior to final cleaning and painting.

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The entire surface shall be cleaned again with certified wax and grease remover before application of any primers. A two component premium PPG Delfleet epoxy primer shall be applied to provide a base for adequate adherence of materials to be applied in subsequent steps of this process. A high quality urethane PPG Delfleet primer surfacer shall then be applied. The entire surface to receive topcoat will be sanded smooth to ensure a level and defect free surface.

Door edges and doorjambes shall be prepared similarly to other body surfaces and finish painted with a certified colorcoat paint. Clearcoat shall be applied per recommendation of paint manufacturer. The entire surface of vehicle body shall be DA finish sanded with no coarser than 320 grit dry sandpaper. The surface shall be washed and wiped once again with certified wax and grease remover and tacked for application of epoxy sealer.

After appropriate flash times have elapsed, a clearcoat finish with a minimum of 2 full wet coats of qualified urethane clearcoat shall be applied.

The body shall be sanded, compounded, buffed and polished to a smooth defect free finish.

Upon final assembly, door hinges, hinge side of doorjambes and all stainless steel mounting hardware shall be coated with ECK, a corrosion inhibitor and permanently mounted to vehicle. Continue to use existing nylon hardware pieces to attach parts and accessories. If any components are damaged or broken, they shall be replaced with new components.

Y\_\_N\_\_

### **BODY PAINT COLOR**

The body shall be painted a single color of White, with PPG paint processes.

Y\_\_N\_\_

### **SAFETY STRIPE AND GRAPHICS**

A Scotchlite blue reflective safety stripe with accent pins and graphics package with a custom door logo shall be provided and installed. The package shall match the department's newest ambulance.

Y\_\_N\_\_

### **ENTRY DOOR PERIMETER SAFETY STRIPES**

A 1/2" reflective perimeter safety stripe shall be installed around the side entry door.

Y\_\_N\_\_

### **REAR ENTRY DOOR PERIMETER SAFETY STRIPES**

A 1/2" reflective perimeter safety stripe shall be installed around the rear entry doors.

Y\_\_N\_\_

There shall be a 3/4" wide reflective stripe ran through the center of the "C" style rub rail.

Y\_\_N\_\_

### **SOL PACKAGE INSTALLATION**

The entire Federal Specification ambulance decal package shall be provided

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Y\_\_N\_\_

## OPERATOR'S MANUAL

A vehicle owner's manual (reference handbook) for the ambulance shall be provided in an 8 1/2" x 11" three-ring, hard cover, loose-leaf binder. It shall contain copies of the chassis manufacturer's warranties and chassis owner's manual, copies of the ambulance manufacturer's warranties and New Vehicle Owners Manual, component manufacturer's equipment information, installation, operating, service instructions, warranties, etc., and a complete set of wiring diagrams or schematics with circuits and components clearly and accurately labeled. Verification of the chassis pre-delivery inspection, and a copy of the ambulance manufacturer's quality assurance form with results of the final vehicle release inspection shall be supplied upon the request of the department.

Y\_\_N\_\_

## OPERATING INSTRUCTIONS

To provide a safe working environment for emergency medical technicians to provide care of patients, this emergency vehicle must be operated in the safest manner possible. To provide proper training for all operators of this emergency vehicle, a professionally produced operations videotape shall be included with the vehicle at the time of delivery. The Digital VideoDisc (DVD) shall present all aspects of the operation of the vehicle including front and rear switch panel operation; daily checkout and maintenance procedures; location of and precautions about the main electrical panel and components. The authorized representative of the manufacturer shall present the DVD and review its contents with the potential operators of the vehicle and shall answer any questions regarding its optional features and safe and correct operation.

Y\_\_N\_\_

## ELECTRICAL SCHEMATICS CD

To provide for continued quality operations of the new ambulance and timely information regarding the vehicles electrical system, the manufacturer shall provide a compact disc with the basic electrical schematics for this emergency vehicle. This CD shall be delivered to this department as an item included in the New Vehicle Owners Manual.